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CURRENT EVENTS: REFLECTIONS ON SOLAR POWER GENERATORS' GROUND LEASING OF VACANT TRACTS

MICHAEL N. WIDENER*

I. INTRODUCTION

Investment troubles in the U.S. real estate market, combined with growing public demand for sustainable sources of energy¹ and seemingly low “entry barriers” in leasing remote, vacant and barren tracts to large-scale solar energy generators, make the invitation to ground-lease to the solar energy industry’s players tempting indeed. This Article cautions that vigilance on the part of each party to the lease of the lease is critical to realize the goals of each side. Careful identification of the parties’ expectations and division of their responsibilities are vital ingredients in avoiding future leasing wrinkles that make adversaries of the lease parties. The purpose of this Article is to anticipate issues threatening lease deal-gridlock and to suggest sensible approaches to dealing with such issues.

This Article will not address other related issues, such as the ongoing debate about the aesthetics of solar panel arrays or matters concerning long-range land and environmental planning. These are critical quality of life issues, but they lie outside the scope of this Article.² The author assumes that rural outlying areas are governed by few, if any, comprehensive land use plans created by counties or parishes hostile to solar facilities.³ This Article avoids discussing “micro” leasing or easement

* © 2011 by the author, counsel to Bonnett, Fairbourn, Friedman & Balint, P.C., Associate Faculty, University of Phoenix School of Business, and Zoning Adjustment Hearing Officer, City of Phoenix. Views expressed in this paper are personal, not institutional or municipal. The author is certified as a Specialist in Real Estate Law by the State Bar of Arizona’s Board of Legal Specialization. This article is for Emmy, who believes Earth can survive us with a bit of effort. All Rights Reserved.

¹ More than half the states have adopted renewable energy standards using market mechanisms to create demand through issuing transferable Renewable Portfolio Standards (RPS) certificates for the production of renewable energy. The value of the RPS certificates is established by the market. See U.S. DEP’T OF ENERGY, *States with Renewable Portfolio Standards*, available at http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm (last updated June 16, 2009).

²For more information concerning the impact of solar development on the environment, see ENERGY DEVELOPMENT AND WILDLIFE CONSERVATION IN WESTERN NORTH AMERICA (David E. Naugle ed. 2011).

³ Zoning codes address where large-scale solar installations are allowed (or not), via cataloging that explains “permitted uses” within the text of county ordinances. In Maricopa County, Arizona’s most highly-populated county, the Board of Supervisors amended the text of its zoning ordinance to render solar plants an accessory use in every county zoning district if a special use permit (a zoning public hearing process) is obtained. In the heavy industrial (IND-3) zoning district in

acquisition on occupied urban residential sites by established utility companies. Instead, it focuses on vacant, or nearly so, tract leasing for commercial-scale solar projects that, at their inception, will be geographically separate from intense residential development.⁴

The next section of the Article, Part II, gives a basic overview of the types of solar energy technologies that are used in the United States. Part III of this Article addresses basic principles of solar power facility finances, including available tax credits and grants, creation of revenue streams from power purchase agreements reached with customers of the solar facilities and project venture formation and investment. Part IV outlines the myriad dimensions of physical and records due diligence to be undertaken by a generator concerning the feasibility of implementing solar facilities project. Part V identifies the processes generating facility developers must navigate in obtaining entitlements and permits from governments to operate. Part VI builds on this explanation, describing the vital needs of prospective ground tenant generators who must juggle site control for the short term with the concurrent and uncertain approvals-seeking agenda. Additionally, this Part addresses the vital needs of prospective landlords, who seek to avoid yielding control of their tracks for indefinite periods and avoid accepting lower than fair rental value for conveying their leasehold estates. The Appendix to this Article is a form of solar ground lease that raises and addresses key discussion points in the parties' negotiation of critical non-monetary aspects of the site lease.

II. A BRIEF DESCRIPTION OF THE TYPES OF SOLAR ENERGY FACILITIES USED IN THE U.S.

Essentially, today there are two types of solar plants under development in the United States of commercial or utility scale.⁵ The first

Maricopa County, a solar plant is a permitted use subject to the district's development standards, so long as water consumed for the production of power is supplied from a "renewable water source," defined as any source of water except groundwater. *See* MARICOPA COUNTY, ARIZ., ZONING ORDINANCE §§ 1206, 1301 (2011), available at http://www.maricopa.gov/planning/resources/Ordinances/pdf/reform_ordinance/mczo1.pdf (last visited Mar. 2, 2012) [hereinafter MARICOPA COUNTY ZO]. These ordinances do touch on common aesthetic concerns related to solar structures.

⁴ For definition of "commercial scale," see Jessica Lillian, *No Single Solar Winner: Developers, Utilities Embracing PV and CSP*, SOLAR INDUSTRY (May 31, 2011), <http://www.solarindustrymag.com/print.php?plugin:content.7997>. This focus on "outlying" installations of solar facilities does not deny that a "coming to the nuisance" litigation era will be avoided even for commercial scale projects, as facilities on private lands inevitably are surrounded by residential communities. *See generally*, *Spur Indus., Inc. v. Del E. Webb Dev. Co.*, 494 P.2d 701 (Ariz. 1972) (involving the famous "Sun City" master-planned community; the Court's opinion upholds a permanent injunction against the feed lot owner, compelling its relocation, and imposition of "relocation damages" against the developer of the residential community (payable to feed lot owner) which failed to inform home purchasers that cattle, and their feed lots, are odorous).

type of facility is known as solar thermal or “concentrating solar power” plant.⁶ In a solar thermal plant, a large field of mirrors, either parabolic dishes or troughs, reflects the sun’s energy.⁷ In the case of parabolic troughs, the energy “beams” onto one of two devices.⁸ The first type of device is a long tube containing a heat transfer fluid that takes the heat into a heat exchanger. The exchanger produces steam to power an electric generator, thereby producing electricity.⁹ The second type of device is a central receiving tower; beaming sunlight onto this tower heats the heat transfer fluid, typically water, to its boiling point, converting it into steam. The steam runs through a turbine, powering a generator that transmits the electricity produced to the end user.¹⁰ In the case of a solar parabolic dish system, sunlight is focused onto a component of an engine like a Sterling cycle engine.¹¹ Heat from the sunlight expands gases in the engine and the gases activate pistons that turn a generator to produce electricity.¹²

The second power generation method is known as the solar photovoltaic (PV) plant.¹³ A PV facility uses arrays of PV panels, or modules, to absorb sunlight.¹⁴ Each array connects to an inverter/transformer pad that converts the low voltage direct current electricity to alternating current electricity (AC), then steps up the voltage of the AC electricity, routing it underground from the transformers to the plant’s internal substations for further transmission.¹⁵ Photovoltaic technology converts photons of light directly into electrical energy.¹⁶ While the concentrating solar facility uses significant volumes of water for steam production, the PV facility uses less water, primarily applied to the periodic washing of the solar panels.¹⁷ These technologies almost certainly will be

⁵ See GEORGE FRISVOLD ET AL., ARIZONA SOLAR ENERGY AND ECONOMICS OUTLOOK 30-37 (2009), available at http://ebr.eller.arizona.edu/sustainability/arizona_solar_energy_and_economic_outlook.pdf (prepared for Arizona Solar Energy and Economics Summit, Jan. 9, 2009).

⁶ *Id.* at 33.

⁷ *Id.* at 13, 33.

⁸ *Id.* at 33-34.

⁹ *Id.* at 33.

¹⁰ *Id.* at 36.

¹¹ FRISVOLD ET AL., *supra* note 5 at 26, 35.

¹² See Hadassah M. Reimer & Sandra A. Snodgrass, *Tortoises, Bats, and Birds, Oh My: Protected-Species Implications for Renewable Energy Projects*, 46 IDAHO L. REV. 545, 570 (2010).

¹³ FRISVOLD ET AL., *supra* note 5.

¹⁴ *Id.*

¹⁵ *Id.*; see also Reimer & Snodgrass, *supra* note 12, at 570-71.

¹⁶ See 42 U.S.C. § 5582(1), (4) (1978).

¹⁷ See MARICOPA CNTY. PLANNING & DEV. DEP’T, REPORT TO THE PLANNING AND ZONING COMMISSION, CASE: Z2010063 (May 12, 2011), available at <http://www.maricopa.gov/planning/PublicMeetings/docs/pdf/BOS/2011/06-08-2011/Z2010063%20Attachments.pdf> (noting the quantity of water for cleaning panels annually for a 75 MW PV project at full build-out is estimated at less than a million gallons annually – roughly the equivalent of the annual consumption of six Arizona households).

replaced in the near term by innovative “mirrored” devices,¹⁸ thin film solar cell technologies,¹⁹ and organic conductive polymers.²⁰ The net effect of burgeoning techniques to capture the sun’s rays and convert them into electricity is that a system of centrally generated power will transform gradually into highly localized energy sources, a decentralized system model that resembles the Internet,²¹ where individual communities and consumer groups become independent micro-utilities.²² This transformation, if it results in “a radical shift to local[,] off-grid energy generation[,]”²³ will dramatically increase ground leasing opportunities for owners of unused tracts of sufficient size and transportation convenience to accommodate the new generation of power-generating entrepreneurs.

III. BASIC PRINCIPLES OF SOLAR POWER GENERATOR OPERATIONS AND PROCESSES FOR GENERATION IN THE UNITED STATES

A. Why the Solar Power Marketplace Has Been Lucrative for Investors into 2011

Describing what drives the negotiating strategy behind lease or permit documentation begins with understanding what motivates solar facility ventures in the United States marketplace to develop sites. At development inception of commercial-grade projects, the main incentive has not been generation of revenues from the sale of power. Instead, a federal production tax credit²⁴ (PTC) coupled with significant tax losses (from bonus depreciation and accelerated depreciation deductions under the modified accelerated cost recovery system for solar land and equipment

¹⁸ Google is developing new “mirror” technologies in an endeavor to reduce thermal plant prices by experimenting with new and cheaper materials for the heliostats’ reflective surfaces and those mirrors’ mounts. See MARK STEVENSON, AN OPTIMIST’S TOUR OF THE FUTURE: ONE CURIOUS MAN SETS OUT TO ANSWER “WHAT’S NEXT?”, 215-16 (2011).

¹⁹ See *id.* at 217 (noting that thin film solar cells, made from materials such as cadmium telluride and copper indium gallium diselenide, require less semiconductor material than the conventional crystalline silicon based semiconductors and are simpler and less costly to manufacture, although they are less efficient at energy conversion to date).

²⁰ See *id.* at 218-21, 226 (noting Konarka uses polymers that are carbon-based and suspended in an inexpensive ink, which allows production of solar cells at a far lower cost than silicon cells. The material works in low light and for longer periods of time. Another manufacturer, Nanosolar, does a thin-film process involving coating their material with nanoparticle ink).

²¹ *Id.* at 223.

²² See *id.* at 223-24.

²³ See *id.* at 228.

²⁴ 26 U.S.C.A. § 45 (West 2010) (noting the tax credit amounts to “1.5 cents multiplied by the kilowatt hours of electricity produced by the taxpayer ... and sold by the taxpayer to a sold to an unrelated [third party] during the taxable year” and the tax credit is subject to an annual adjustment for inflation).

costs) to offset gains, made investors eager participants in these ventures.²⁵ If the developer and investor prefer, the American Recovery and Reinvestment Act of 2009 (Stimulus Bill) allows the facility eligible for the PTC to elect instead whether to take the federal business investment tax credit (ITC) under 26 U.S.C. § 48, or receive a grant from the U.S. Treasury Department (the so-called 1603 Program) that functions similarly to the ITC. Treasury will make Section 1603 Program payments to qualified applicants in an amount generally equal to 10 percent or 30 percent of the basis of the specified energy property determined by the type of property. Eligibility for a Section 1603 payment generally requires applicants to place the energy property in service during 2009, 2010, or 2011. Property placed in service after 2011 may qualify for a Section 1603 payment if construction began on that property during 2009, 2010, or 2011, and the applicant places the property in service by the date on which the related tax credit expires (a “credit termination” date). For all properties placed in service after 2011, the applicant must submit a Begun Construction Application before October 1, 2012, demonstrating that physical work of a significant nature had begun on the property during 2009-11.²⁶

This grant is not includable in the recipient’s taxable income, except for certain leasing transactions.²⁷ The tax basis of the facility owner’s property is to be reduced by fifty percent of the amount of the grant.²⁸ The grant must be applied for prior to Oct. 1, 2012, regardless of when the property was placed in service.²⁹ The tax credit for a qualified solar facility placed in service before Jan. 1, 2017 is calculated as thirty percent of the tax basis, which is usually the cost basis of the qualifying “energy property.”³⁰ A project coming online after that date will entitle its owner to an ITC of ten percent of the tax basis of the qualifying property.³¹ Additionally, qualifying components of a solar facility are eligible for greatly accelerated depreciation deductions, typically taken over a five-year period, using the double declining balance method of accounting.³² With these benefits, a market for “monetizing” the federal income tax benefits developed, whereby investors in a partnership would contribute cash to help

²⁵ See STOEL RIVES, LLP, LEX HELIUS: THE LAW OF SOLAR ENERGY: A GUIDE TO BUSINESS AND LEGAL ISSUES, ch. 8 at 1-3 (3d ed. 2011), available at <http://www.stoel.com/webfiles/lawofsolarenergy.pdf> (last visited April 23, 2012) (hereinafter LEX HELIUS).

²⁶ See U.S. Department of the Treasury, Recovery Act 1603 Program Website (“1603 Website”), available at <http://www.treasury.gov/initiatives/recovery/Pages/1603.aspx>.

²⁷ Lex Helius, *supra* note 25, ch. 8 at 3.

²⁸ *Id.*

²⁹ *Id.*; see also 1603 Website.

³⁰ Lex Helius, *supra* note 25, ch. 8 at 1.

³¹ LEX HELIUS, *supra* note 25, ch. 8 at 1; see also *id.* ch. 7 at 7 (noting that subject to certain exceptions, the tax credit has a recapture period of five years after the facility is placed in service).

³² Lex Helius, *supra* n. 25, ch. 8 at 3.

finance a solar facility and allocations of tax credits and losses would benefit the party with a tax-savings agenda.

A developer benefit apart from tax considerations was the Energy Department's two loan guaranty programs, popularly denominated the Section 1703 and Section 1705 programs. The former program was created by the Energy Policy Act of 2005,³³ supporting clean –energy technologies when commercial and private banks had difficulty underwriting these activities. Section 1705's program was inserted into the stimulus bill to encourage loan placement when the economic downturn peaked. The Section 1705 program received unfavorable press before it expired on September 30, 2011. First, Solyndra, LLC received a loan guarantee funded by the Treasury Department's Federal Financing Bank under the program, then sought bankruptcy protection, ultimately leaving taxpayers to absorb a \$535 million loss.³⁴ Second, a number of applications for those loan guarantees were not timely processed by the Energy Department and Treasury, in some cases due to delays by guaranty applicants failing to start construction of their projects by federal deadlines.³⁵

Applicants for Section 1703 guarantees under the 2005 Act had been required to pay an upfront fee known as a credit subsidy. This was a form of government “hedge,” or loan loss reserve, offsetting the government's risk of guaranteeing the developer's loan under Title XVII of the Act.³⁶ The extent of credit subsidy support was graduated according to DOE risk-scoring. (By contrast, under the Section 1705 loan guaranty program, the government underwrote the credit subsidy – effectively creating a 100% guaranty.) On April 5, 2012, Energy Secretary Chu announced that DOE had been authorized, under the Consolidated Appropriations Act of 2012, to spend \$170 million to pay all or part (at DOE's election) of the borrower's credit subsidies and that DOE had \$1.5 billion in additional loan guarantee authority for projects where the credit subsidy payments will be funded by a project sponsor.³⁷ Essentially, then, the \$170 million will cause part of the Section 1703 program to resemble a revived Section 1705 program to the degree authorized by DOE.³⁸ To take

³³ P.L. 109-58, 119 Stat. 594; the Act predominantly appears in 42 U.S.C. Sec. 15801-16524.

³⁴ See Alison Vekshin, *Solyndra's Loan Guarantee "Was Rushed," Treasury Audit Says*, BLOOMBERGBUSINESSWEEK, April 3, 2012, available at <http://www.businessweek.com/news/2012-04-03/solyndra-s-loan-guarantee-was-rushed-treasury-audit-says>.

³⁵ See Matthew L. Wald, *Energy Dept. to Revitalize a Loan Guarantee Program*, THE NEW YORK TIMES April 5, 2012, B2, available at http://www.nytimes.com/2012/04/06/business/energy-environment/energy-department-to-revitalize-a-loan-guarantee-program.html?_r=1&ref=matthewwald#.

³⁶ See Section 1703 Process Form Letter of April 5, 2012, available at <http://energy.gov/downloads/1703-process-letter> (“Process Letter”).

³⁷ See David G. Frantz Letter of April 5, 2012 to Senators Bingaman and Murkowski of the Senate Committee on Energy and Natural Resources, available at <http://energy.gov/downloads/1703-process-letter>.

³⁸ See *id.*

advantage of these pots of money, applicants had to elect to be considered under the revitalized program by notifying DOE before April 27, 2012.³⁹ DOE then would apply “prioritization criteria” to determine who would advance to the “conditional commitment” stage for federal guarantees of their loans.⁴⁰

Current concern as to whether any of these programs will survive the careful scrutiny and attacks by conservatives in the U.S. House of Representatives has some basis,⁴¹ but there is no doubt that these programs initially spurred the development of a number of solar generation projects in the American desert.⁴² Whether this industry can “stand alone,” independent of such federal incentives, or the incentives of states having similar income tax credits for solar systems is unclear.⁴³ However, given the continuing interest in tapping this renewable resource, coupled with the increasing efficiency of solar technologies, there is reason for optimism.

B. How Power Generator Stakeholders Align for Solar Project Implementation

Apart from the ground, or at times rooftop, leasing of physical locations for small-scale solar power generation, solar generation projects are organized in large part to permit investor enjoyment of tax benefits like credits and accelerated depreciation, to enable developer enjoyment of participation in the profits of a venture and perhaps a development fee, and to facilitate customer enjoyment of a reliable source of renewable energy.⁴⁴ Optimal financing of a commercial solar project entails two fundamental components.⁴⁵ First is establishing a long-term agreement for the sale of power to a customer at a reasonably predictable price⁴⁶, a process more

³⁹ See Process Letter, *supra* note 36, at page 2.

⁴⁰ See *id.*

⁴¹ See Erin Kelly, *Solar Power Funding Threatened by Congress: Federal Grants, Loans in Jeopardy*, ARIZ. REPUBLIC (June 26, 2011), <http://www.azcentral.com/arizonarepublic/news/articles/2011/06/26/20110626solar-power-congress-funding-cuts.html>.

⁴² See Todd Woody, *Solar Power Projects Face Potential Hurdles*, N.Y. TIMES October 29, 2010 at B1, available at <http://www.nytimes.com/2010/10/29/business/energy-environment/29solar.html?pagewanted=all>.

⁴³ A number of states offer solar system income tax credits, see LEX HELIUS, *supra* note 25, ch. 8 at 5. A searchable database of all incentives afforded by federal and state jurisdictions, the Database of State Incentives for Renewables & Efficiency (DSIRE), was established in 1995 and remains funded by the U.S. Dep’t of Energy with the cooperation of the North Carolina Solar Center and the Interstate Renewable Energy Council. See DSIRE, <http://www.dsireusa.org/> (last visited Mar. 3 2012).

⁴⁴ Ed Feo, Partner with Milbank, & Stephen Tracy, Partner with Novograda & Co., Presentation at Solar Power International 2009: Commercial Finance: The Dark Arts of Leverage, Tax Equity, Leases and More (Oct. 26, 2009), presentation available at http://www.novoco.com/energy/resource_files/reports/sbt_finalpres0_102609.pdf.

⁴⁵ *Id.*

⁴⁶ *Id.*

fully described in subpart C. The second component is forming an investment vehicle to own the solar facilities; generally, this implies participation by a tax-advantage seeking investor.⁴⁷ The investor provides long-term financing, or credit enhancement for loaned funds, in return for three items: all, or the lion's share, of the tax benefits; cash flows from the payments made under a facility's lease structure; and perhaps a residual interest in the assets. In order to invest, this investor must be assured the power purchase agreement is financeable. This is a function of the creditworthiness of the energy customer and the favorable terms contained within the purchase agreement, including the absence of "off-ramps" for the customer to cancel the agreement before the full term of the agreement has run.

The developer of the solar project, sometimes regarded as a "sponsor," typically does not desire to exploit the tax benefits of owning solar facilities.⁴⁸ This venture participant instead develops the project and forms the relationship with the party regarded as the "customer," the end user of the power generated by the solar facilities.⁴⁹ The developer's responsibilities include obtaining the customer's irrevocable commitment to purchase the generated power, designing, permitting, and causing the solar generation facilities to be installed, and operating, causing to be insured and maintaining the facilities after power generation commences until the facilities are sold or the ground lease lapses.⁵⁰

The customer may own the physical site for the installation of the solar facilities. In such cases, the customer is sometimes referred to as the "host" as well.⁵¹ The customer's obligations are to pay for the electricity generated from the project, or perhaps to purchase Renewable Energy Credits.⁵² On those occasions when the customer also is the host, the customer further must cooperate with the developer in obtaining permits from governments and third party consents. For instance, access and solar easements from adjacent landowners to enable installing the solar facilities upon the ground leased site.

A fourth player in the solar generation activities frequently is a system owner, which is typically a special purpose entity (SPE) established by the developer to own the solar facilities installed on the landowner's

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ Feo & Tracy, *supra* note 44.

⁵¹ *Id.*

⁵² Renewable Energy Certificates (RECs) are tradable, intangible energy commodities in the United States evidencing that 1 megawatt-hour (MWh) of electricity (per credit) attributed to an eligible renewable energy resource. Solar Renewable Energy Certificates (SRECs) are RECs specifically generated by solar energy. *Green Power Markets*, U.S. DEP'T OF ENERGY, <http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=0> (last visited Mar. 3, 2012); LEX HELIUS, *supra* note 25, ch. 9.

tract until, if ever, they are purchased by the host.⁵³ The advantage of the SPE to the project developer is two-fold. First, its separate existence limits the developer's liability exposure to the amount of the developer's investment in the SPE.⁵⁴ The second advantage is that establishing the SPE enables the solar facilities to be financed on an individual or "project" basis.⁵⁵ The customer is comforted by the SPE's insuring the insurable risks of the project⁵⁶ and because of the reality that the developer and investor are making material equity investments in the solar project.

C. How Generators Structure Customer Agreements for Revenue Streams

In order for owners of a solar project to obtain maximum tax benefits, they typically utilize the limited partnership or limited liability company entity form to obtain the pass-through treatment of tax incentives for individual investors and to share the revenues with developers or SPEs from the sale of electricity and Renewable Energy Credits.⁵⁷ Once these enterprises are established, the next step done, concurrently, with the developer's location of a suitable generation site, is to obtain a power purchase agreement (PPA) from a customer.⁵⁸ There is no industry standard form for a PPA because there is no uniform set of "deal points" that guarantees a satisfactory outcome for the generating enterprise.⁵⁹ Certain patterns appear in many PPAs apart from those prepared by a regulated utility or a utility-scale generator. The typical non-utility scale PPA calls for delivering electricity "behind the meter" for the customer's immediate use — that is, with no requirement for using the local utility's transmission grid.⁶⁰ The PPA typically has a term of fifteen or twenty years, which is dictated by the generator's intended rate of return on the investment.⁶¹ However, it is becoming more common for the PPAs to have a shorter term where the customer options to purchase the facilities are involved.⁶² Particularly in PV facilities, the power purchaser's option to purchase the installation after the fifth or sixth year of the PPA, or upon the scheduled

⁵³ Feo & Tracy, *supra* note 44.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.* (noting that generally, PV solar facilities are environmentally neutral systems that present little risk of exploding, leaking toxic or hazardous substances or catching fire, absent a wildfire in an adjacent western forest).

⁵⁷ LEX HELIUS, *supra* note 25, ch. 2 at 2 and ch. 9 at 1.

⁵⁸ *See id.* ch. 7 at 2.

⁵⁹ *See id.* ch. 2 at 9.

⁶⁰ *Id.* ch. 2 at 4-5 (noting that the agreement may provide that the generator may sell excess capacity to the local utility at the meter. However, in some states, deliveries to the local utility may trigger a regulatory requirement).

⁶¹ *Id.* ch. 2 at 3.

⁶² *Id.* at 5-6.

expiration date of the PPA,⁶³ is frequently acceptable to the generator so long as its investors have fully recaptured their federal energy investment tax credits, or obtained Treasury cash grants in lieu of credits, and have thus otherwise realized their expected investment return.⁶⁴

Typically, the parties to a PPA acknowledge that the power capacity will decrease annually by a fixed percentage due to panel output degradation.⁶⁵ Aside from this annual impact on output, an initial period of sub-optimal output is the so-called “test period production,” or the “test energy rate.”⁶⁶ This means the price per megawatt is lower than the contracted price when the facility is operating at full capacity.⁶⁷ Therefore, a PPA provision of great significance is the definition of “commercial operation date,” which typically triggers commencement of the PPA’s term and ties to the customer’s obligation to commence paying for the energy.⁶⁸

IV. THE FACILITY GENERATOR’S DILIGENCE INQUIRIES CONCERNING SITE SELECTION AND DEVELOPMENT PROCESSES

First, before deciding to enter into a PPA, which will facilitate entry into an agreement or an option to ground lease a tract, the developer must determine the likelihood that the tenant entity will be entitled to use the property for solar facilities’ development.⁶⁹ For this reason, the tenant typically desires an “option period,” created by a separate option agreement, or a “due diligence” period in the lease agreement.⁷⁰ This period allows the tenant to engage in the due diligence processes described in this section and elsewhere.⁷¹ Additionally, this period affords the prospective tenant an off-ramp, or a right to cancel long-term commitments to the prospective landlord, if the results of the feasibility investigation of a solar project on a site are discouraging in their political, timing, or finance dimensions.⁷² The prospective tenant must learn whether there is a general (or comprehensive) land use plan that requires modification, which is frequently the case where large tracts of land are involved.⁷³ In addition, they must determine whether a specific map, or “rezoning,” change or zoning adjustment must be made for county or municipal approval of the

⁶³ *Id.*, ch. 2 at 6.

⁶⁴ *Id.*

⁶⁵ *Id.* at 4.

⁶⁶ *Id.* ch. 3 at 4.

⁶⁷ *Id.* at 4-5.

⁶⁸ *Id.* at 3.

⁶⁹ LEX HELIUS, *supra* note 25, ch. 1 at 7.

⁷⁰ *Id.* ch. 2 at 6.

⁷¹ *Id.* ch. 1 at 5-7

⁷² *Id.* ch. 3 at 4.

⁷³ California State Auditor Report 2007-119, Solar Energy: As the Cost of this Resource Becomes More Competitive With Other Renewable Resources, New Solar Power Plants Should Increase, 24 (January, 2008), available at <http://www.bsa.ca.gov/pdfs/reports/2007-119.pdf>.

solar facilities.⁷⁴ Land use authorities may have input on other aspects of the use, such as dust control during construction, which addresses soils disturbance, the facility's generation phases, and site plan approval for the operation. In most communities, this last activity entails an approval process that is separate from changing the base zoning or obtaining zoning adjustment. Since site plan reviewers do not operate in an imaginary world, in order to determine the likelihood that the final site layout will be approved requires preparing a conceptual plan that indicates the locations of the solar technology, wells and their apparatuses, maintenance structures, points of ingress and egress and connecting driveways, and perimeter screening.⁷⁵ With this data in hand, officials can determine general compliance with community development requirements which may include lot boundary setbacks, maximum lot coverage, and maximum structure heights.⁷⁶

Second, the tenant must be educated on the appurtenant water rights, both surface and ground, associated with ownership of the parcel; among such considerations are: rights to withdraw groundwater, well rights relating to maximum pumping capacities, the extent to which surface water may be appropriated, and runoff contamination permitting.⁷⁷ In the desert southwest, these considerations are particularly sensitive; for example, in and around several urban areas of Arizona, there are Active Management Areas regulating the use of groundwater, which are imposed to diminish overdraft of aquifers.⁷⁸ Since solar concentrating plants are water-usage intensive,⁷⁹ the more difficult access to water is for either hydrological or legal reasons, the greater the likelihood is that the generator must use PV technologies.

Third, transportation issues may become critical in reaching the decision whether to implement facilities at a site.⁸⁰ The extent that sufficient rights of way abutting the property, both public and private, are available and appropriate for industrial use must be explored. The ownership of private ways must also be established.⁸¹ There must be

⁷⁴ See LEX HELIUS, *supra* note 25, at ch. 6 at 4.

⁷⁵ See *id.* ch. 1 at 1-3

⁷⁶ See LEX HELIUS, *supra* note 25, ch. 1 at 7.; see also BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, INSTRUCTION MEMORANDUM NO. 2007-097 (Apr. 4, 2007), available at http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2007/im_2007-097_.print.html [hereinafter MEMORANDUM No. 2007-097]

⁷⁷ See MEMORANDUM NO. 2007-097, *supra* note 76.

⁷⁸ See Robert Jerome Glennon, *Because That's Where the Water Is: Retiring Current Water Uses to Achieve the Safe-Yield Objective of the Arizona Groundwater Management Act*, 33 ARIZ. L. REV. 89, 90 n.2, 91 (1991).

⁷⁹ See FRISVOLD ET AL., *supra* note 5, at 5 (Tower systems use approximately 750 gallons of water per megawatt hour. In contrast, since PV systems use semiconductor materials to convert sunlight to energy, water is employed essentially to keep the panels clean for conductivity.).

⁸⁰ See LEX HELIUS, *supra* note. 25, ch. 1 at 3-5.

⁸¹ See *id.*

sufficient curb cuts, in number and width, available for the necessary ingress and egress to the site proposed.⁸² Any restrictions on who may use the private ways and the allowed purposes those uses is crucial information. In many instances, rural roads were built for the sole intention of agricultural transportation. In most cases, these farm roads are single lane and unpaved, conditions that may not enable industrial operations.⁸³ Survey maps, county or municipal right-of-way, maps and other title indicia must be reviewed to identify needed consents for the movement of construction, maintenance, and repair vehicles into and from the facility.⁸⁴

The importance of reviewing title to the site is occasionally overlooked in ground leasing deliberations. Much of the privately owned, undeveloped, remoter lands in states where government ownership of land predominates originated under federal and state patents. In so-called "Public Land" states,⁸⁵ federal grants were made as long ago as 1820, and the panoply of instruments of conveyance or use licensing is awe-inspiring. These documents of land identification include: master title plats; composites of all federal surveys, some dating back to 1810 for a township; so-called use plats, and supplemental plats.⁸⁶ Among the federal documents available for review are: Agricultural College Scrip, Cash Entry, Homestead, Mineral (lode), and Military Bountyland Warrant evidence of patents or their analogs.⁸⁷ The reason to research all applicable instruments affecting the title to a parcel is that in many instances the granting federal agency, historically the U.S. General Land Office and later individual federal agencies, may have reserved certain rights in and to the land, such as the right to use water, the right of access, or the right to exploit the mineral reserves.⁸⁸

State land grants likewise may recognize mineral or other rights prior-in-time grants; the surface title grantee takes his conveyance subject

⁸² See *id.*

⁸³ See *id.*

⁸⁴ See *id.*

⁸⁵ Thirty states were created out of the public domain, only one of which (Florida) borders on the Atlantic Ocean's coastline. In those where the public land surveys have been substantially completed, excepting Oklahoma, the original records have been transferred to the States; however, the Bureau of Land Management retains administrative authority in questions relating to the remaining public land in those states. See BUREAU OF LAND MGMT.: MANUAL OF SURVEYING INSTRUCTIONS, ch.1, sec. 23 (1973), available at <http://www.blm.gov/cadastral/Manual/73man/id27.htm>.

⁸⁶ See *General Land Office Records* BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, <http://www.glorerecords.blm.gov> (last visited Mar. 3, 2012).

⁸⁷ *Id.* (Bureau of Land Management website contains a searchable database of the various types of documents listed); see generally BLM WYO., PUBLIC LAND TERMS, available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/docs.Par.9071.File.dat.wynf-0011.pdf> (last visited Mar. 3, 2012) (glossary of federal land law terms).

⁸⁸ See Congressional Research Service Report No. 81-15-6 ENR, *Land Disposal Policies of the Principal Federal Land Management Agencies* 26 (July 1, 1981), available at <http://www.nationalaglawcenter.org/assets/crs/81-156.pdf>.

to these prior conveyances.⁸⁹ It bears remembering that the initial grantee in many federal patents was a state, or an agency thereof, including departments long since extinct via merger, consolidation or obsolescence. This body in turn may have reserved rights prior to the state's or its agency's downstream conveyance.⁹⁰ Reservations in patents may be of a nature rendering long-term installation of solar facilities risky, such as from "a patent ambiguity"; these reservations clearly are inconvenient, implicating the need for title insurance or for selecting another site in too-thorny circumstances.⁹¹

Another title condition that can restrict solar development is a restrictive covenant contained in a deed from a prior private owner. These may function as an easement or a like operational encumbrance for the benefit of a neighboring parcel's owner.⁹² Covenants sometimes present a future operational hurdle, when owners of "busted subdivisions" in the southwestern and western United States seek to repurpose residential projects commenced in remote suburbs of urbanized areas via roads that afforded freeway ramp access.⁹³ Additionally, public records pertaining to water rights within the affected jurisdiction may state or imply that groundwater withdrawal rights have been conveyed separately from the land or that such withdrawals have restricted uses.⁹⁴ Such facts, perhaps ignored or forgotten in the intervening years after serial conveyances of parcels, can devastate the expectations of a solar project developers if discovered late in the due diligence process.⁹⁵

V. THE SOLAR FACILITY DEVELOPER'S CHALLENGES IN ENTITLEMENT ATTAINMENT

A. Federal Governance in Public Land Permitting

Aside from securing customer demand for the supply of electricity to be generated, solar generators must satisfy certain requirements to

⁸⁹ See Alison Gardner, David Sewell & Brent Stahl, *Mineral Issues' Impact on Solar Energy Development in Texas*, 6 TEXAS J. OIL, GAS & ENERGY L. 241, 244-47 (2010-11).

⁹⁰ See TRUST LAND MGMT. DIV., *Overview of School Trust Lands*, MONT. DEP'T OF NATURAL RES. & CONSERVATION, <http://dnrc.mt.gov/Trust/AboutUs/Overview.asp> (last visited Mar. 3, 2012) (Montana retained mineral rights in trust lands where it sold the surface acreage).

⁹¹ See LEX HELIUS, *supra* note 25, ch. 1 at 4.

⁹² See THOMAS STARRS, LES NELSON & FRED ZALCMAN, BRINGING SOLAR ENERGY TO THE PLANNED COMMUNITY 11-14, *available at* http://www.consumerenergycenter.org/erprebate/documents/CC+Rs_and_solar_rights.pdf (last visited Mar. 3, 2012).

⁹³ See *id.* at 33.

⁹⁴ See LEX HELIUS, *supra* note 25, ch. 1 at 6-7.

⁹⁵ See *id.* ch. 1 at 5, ch.6 at 5.

qualify for federal and state grants and loan guarantees.⁹⁶ One key objective of commercial generators is to avoid exceeding upper limits on the number of power purchasers they can serve before becoming subject to regulation by state public utility commission.⁹⁷ The first grants, loan guarantees, and investment tax credit incentives to solar generators have focused upon construction of facilities on federal land,⁹⁸ which subject applicants for this aid to the jurisdiction of the agency charged with its management. This is usually the Bureau of Land Management or the U.S. Forest Service.⁹⁹ The Bureau of Land Management issues right-of-way authorizations,¹⁰⁰ and the U.S. Forest Service issues special use permits¹⁰¹ upon final approval of the proposed facilities.¹⁰² Such approvals require an environmental review under the National Environmental Policy Act (NEPA).¹⁰³ Impacts of the proposed facility, entailing a four to six month

⁹⁶ See generally *Glossary, Rules, Regulations & Policies*, DSIRE, <http://www.dsireusa.org/glossary/> (last visited Mar. 3, 2012).

⁹⁷ For instance, in California a solar generator can sell power to not more than two other entities or persons for use on the tract where the electricity is generated, or on property abutting it, without being regulated as a public utility (including state regulation of rates and other terms of sale). See, CAL. PUB. UTIL. CODE § 2868(b)(1)-(2) (West 2009) (rendering the generator an “independent solar energy producer” under the code). This means that the landowner may be frustrated by the potential generator’s resistance to installing as many solar panels as would seem merited by the available acreage of the parcel leased.

⁹⁸ One reason for this is that the departments issuing the loan guarantees or the tax credits better understand federal lands; another is that federal land management policies encourage development of solar energy on federal lands. See LEX HELIUS, *supra* note 25, ch. 6 at 2. Finally, solar plants initially concentrated their locations on federal lands, perhaps in part due to the fact that towers can reach 800 feet in height, dominating the view-shed on any but the largest of tracts, which tend to be in federal ownership. See John Copeland Nagle, *See the Mohave!*, 89 OR. L. REV. 1357, 1380-82 (2009).

⁹⁹ Recently, the armed services have begun transacting business with solar enterprises on military bases, illustrated by two projects undertaken on the Davis-Monthan Air Force Base outside Tucson, Arizona. See, e.g., *D-M Awards Solar Photovoltaic Utility Contract to SunEdison*, AIR FORCE PRINT NEWS TODAY, (Sept. 15, 2010), http://www.dm.af.mil/pressreleasesarchive/story_print.asp?id=123222163 (giving a 20-year ground lease to a new 14.5 MW PV array that 130 acres that will deliver 35% of the base’s total energy load; together, this project and another also on the base, will give it the largest solar-generating capacity (20 MW total) on any Department of Defense lands).

¹⁰⁰ See MEMORANDUM NO. 2007-097, *supra* note 80 (indicating its policy for processing applications for commercial solar rights of way grants on land it administers). BLM must review solar projects installed on private lands if the transmission lines serving the customers cross public land which is permanently disturbed. See, e.g., U.S. DEPT. OF INTERIOR, NEWS RELEASE: SALAZAR APPROVES MAJOR RENEWABLE ENERGY PROJECTS, IDENTIFIES NEXT STEP IN SOLAR ENERGY DEVELOPMENT (July 14, 2011), available at <http://www.doi.gov/news/pressreleases/Salazar-Approves-Major-Renewable-Energy-Projects-Identifies-Next-Step-in-Solar-Energy-Development.cfm?renderforprint=1> & (discussing the Abengoa Mojave and Imperial Energy Center solar projects on private tracts).

¹⁰¹ See *Forest Service Manual*, U.S. FOREST SERV., U.S. DEP’T OF AGRIC., FOREST SERVICE MANUAL §§2724.15, 2726.23 (Aug. 4, 2011), available at http://www.fs.fed.us/im/directives/fsm/2700/wo_2720.doc (implying that the production of solar energy “may not be as dependent upon National Forest System lands as other energy sources” and that personnel of the Forest Service are cautioned to “consider authorizing this use only when other lands are not available” and “if adverse impacts on the forest can be minimized.”).

¹⁰² See *id.*; see also MEMORANDUM NO. 2007-097, *supra* note 80.

¹⁰³ See 42 U.S.C. § 4344(3) (2003); MEMORANDUM NO. 2007-097, *supra* note 76.

government review process, are gauged in reference to the built and natural environments.¹⁰⁴ If it is determined that the proposed solar project will cause no significant impact, called a “finding of no significance,” then no further level of review will occur under NEPA.¹⁰⁵ Conversely, if it is determined that the project is likely to have a significant environmental impact, a full-blown Environmental Impact Statement (EIS) is triggered. This process, due to its inputs from public and agency sources, is seldom completed in less than one year.¹⁰⁶

An additional type of prospective landlord prospect for generators, with federal oversight, are Indian tribes owning extensive tracts of vacant land.¹⁰⁷ Before the Bureau of Indian Affairs (BIA) will approve leases of tribal land, it must ensure compliance with NEPA and two other federal acts, the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA).¹⁰⁸ Under Section 106 of the NHPA, the BIA must consider impacts of its actions on any property, including traditional cultural properties, whether they are listed or eligible for listing, on the National Register of Historic Places.¹⁰⁹ The BIA must consult with the tribes and other interested parties on measures mitigating any adverse impacts of the proposed action on those cultural properties.¹¹⁰ Section 7 of the ESA requires the BIA to consult with the applicable government agencies if a proposed leasing action may affect species or designated critical habitats of species listed as threatened or endangered under the

¹⁰⁴ LEX HELIUS, *supra* note 25, ch. 6 at 2.

¹⁰⁵ *Id.*

¹⁰⁶ LEX HELIUS, *supra* note 25, ch. 6 at 2. In contrast, California, operating under its Environmental Quality Act, conducts a comprehensive environmental review of project impacts concurrently with the review of the permit itself for land use and regulatory consistency, somewhat streamlining the process overall. *See id.* The sheer out of pocket costs of these processes, added to the time value of money in a protracted federal review, will drive entrepreneurial generators to private lands and lower authority-level reviews – particularly if the sun-setting incentives of tax credits, in lieu grants and loan guarantee programs are not renewed by Congress prior to their scheduled lapse dates. In that event, these generators may be content to accept sales tax incentives from states and avoid federal oversight. *See id.* ch. 8 at 5. Notably, BLM is working toward more efficient responses, for example, by creating programmatic environmental impact statements (PEIS) and a map indicating desirable and undesirable locations for solar energy facilities on public lands it manages. *See Reimer & Snodgrass, supra* note 12, at 571. The Draft Solar PEIS was first released for public review in December, 2010 and is scheduled for final publication in March, 2012 following a public comment period; the PEIS serves to establish standards for developing utility-scale projects on public lands, based on “landscape” level planning and the best available science, designed to promote development in six so-called Solar Energy Zones in Arizona, California, Colorado, Nevada, New Mexico and Utah identified as having the highest solar energy production potential coupled with the fewest environmental and resource conflicts. *See SALAZAR APPROVES MAJOR RENEWABLE ENERGY PROJECTS, IDENTIFIES NEXT STEP IN SOLAR ENERGY DEVELOPMENT, supra* note 104.

¹⁰⁷ LEX HELIUS, *supra* note 25, ch. 1 at 4.

¹⁰⁸ *Id.* ch. 10 at 1. The BIA can waive the EIS requirement if a “categorical exclusion” applies, triggered by Bureau action of the nature that will not have any significant environmental impact, or when the initial environmental assessment leads to the BIA’s conclusion of a finding of no significance.

¹⁰⁹ *Id.* ch. 6 at 3.

¹¹⁰ *Id.* The BIA’s authority to require the EIS rests on its trustee relationship to the tribe.

ESA.¹¹¹ Other federal laws of general application typically apply to tribal lands; compliance with them can delay project development and entail mitigation and remediation expenses to the developer charged with offsetting adverse project impacts.¹¹² Finally, an assessment of the cultural relevance of sacred locations, such as burial grounds, native plant harvesting areas and ceremonial sites, must be obtained and vetted prior to entering into a lease.¹¹³ The generator must recognize that tribal perspectives on cultural relevance are as distinctive as the tribal governments themselves.¹¹⁴

Lease durations on tribal lands trigger federal regulatory engagement. Because the Secretary of the Interior charters tribal government corporations under Title 25 of the United States Code,¹¹⁵ unless BIA approval first is obtained, the tribal corporation may lease tracts for no longer than twenty-five years. The so-called Section 477 leases cannot include options extending that period.¹¹⁶ An exception to this condition arises when a tribe and the BIA have entered into a Tribal Energy Resource Agreement (TERA).¹¹⁷ Pursuant to the Energy Policy Act of 2005,¹¹⁸ a TERA that incorporates solar energy development enables a tribe to consummate solar energy leases and to issue rights of way easements for tribal land-based projects for thirty years. These agreements are renewable for an additional thirty years by the tribe without further BIA approval.¹¹⁹

Prospective tenants recognize that beyond mere land ownership, Indian tribes are independent governments exercising significant tax and regulatory authority over their respective properties, including their water rights.¹²⁰ Accordingly, solar facility developers must review this unique

¹¹¹ *Id.* These agencies include the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

¹¹² *See id.* ch. 6 at 3.

¹¹³ LEX HELIUS, *supra* note 25, ch. 1 at 4.

¹¹⁴ *Id.* ch. 1 at 4-5.

¹¹⁵ *See* 25 U.S.C. § 477 (2010).

¹¹⁶ *See id.* However, lands owned by individual tribal members are not subject to such duration restrictions.

¹¹⁷ LEX HELIUS, *supra* note 25, ch. 10 at 2.

¹¹⁸ *See* Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005); *see also* 25 U.S.C. § 3504 (2005).

¹¹⁹ *See* Andrea S. Miles, *Tribal Energy Resource Agreements: Tools For Achieving Energy Development And Tribal Self-Sufficiency Or An Abdication Of Federal Environmental And Trust Responsibilities?* 30 AM. INDIAN L. REV. 461, 463 (2005-2006). The BIA nonetheless must perform the NEPA analysis before approving the TERA. If such an agreement is not reached with the tribe, the BIA also must grant rights of way across tribal land for project-related transmission and collector lines, roads or other project elements requiring traversing the land. LEX HELIUS, *supra* note 25, ch. 10 at 2. Final federal regulations governing TERA agreements were issued on March 10, 2008. *See* 25 C.F.R. §§ 224.10-224.185 (2008). Unfortunately, no tribe has successfully attained a TERA arrangement. Bethany C. Sullivan, *Changing Winds: Reconfiguring the Legal Framework for Renewable- Energy Development in Indian Country*, 52 ARIZ. L. REV. 823, 831 (2010).

¹²⁰ Susan M. Williams, *Overview of Indian Water Rights*, 107 J. CONTEMP. WATER RES. & EDUC. 6, 6 (2007), available at <http://opensiu.lib.siu.edu/jcwre/vol107/iss1/2/>.

legal landscape to determine the effect of tribal laws and regulations, and the impact of the tribal doctrine of sovereign immunity, on a proposed project.¹²¹

B. State and Local Regulatory Entitlement Processes

After a general understanding is reached on the suitability of the site from the standpoint of state or local zoning and planning officials¹²² and the availability of water and legal access to the site,¹²³ the next phase in the development process, setting aside for the moment financing and similar issues, is to ascertain the extent of state and federal governmental¹²⁴ approvals required and whether the site is susceptible to being approved by those having jurisdiction.¹²⁵ Governmental entitlements affecting power generation on private lands entail the developer's compliance, among other matters, with, *inter alia*:

1. Mandates for environmental surveys that may involve surveys of archeology, endangered or protected species and similarly sensitive phenomena.¹²⁶

¹²¹ LEX HELIUS, *supra* note 25, ch. 10 at 3.

¹²² A number of states, including Oregon, require energy facilities that will generate a defined number of MW to undergo siting by the applicable siting council while allowing facilities that generate under the threshold amount of power to be sited by the local jurisdiction. *See* OR. REV. STAT. § 469.300 (2011); OR. DEP'T OF ENERGY, *Facilities Under Council Jurisdiction*, OREGON.GOV, <http://www.oregon.gov/ENERGY/SITING/juris.shtml> (last updated Dec. 14, 2011). Other states either have taken on full authority for siting any sized energy facility, such as Washington (at the applicant's election) or accept no role in the siting process, such as Texas. LEX HELIUS, *supra* note 25, Ch. 6 at 1.

¹²³ *See supra* Part III; *see also* FRISVOLD ET AL., *supra* note 5 (describing the water needs of solar energy facilities).

¹²⁴ As this article is prepared, some anxiety about federal renewal of "sun-setting" federal program vulnerability is in journalistic evidence, *see, e.g.*, Kelly, *supra* note 45 (explaining that the Energy Department § 1703 loan guarantee program slated to end Oct. 1, 2011; it, along with the § 1603 Treasury Grant Program slated to end Dec. 31, 2011, are in jeopardy of expiration without Congressional renewal, the appetite for which is waning among Republicans).

¹²⁵ LEX HELIUS, *supra* note 25, Ch. 6 at 1, 3.

¹²⁶ *See Arizona Power Plant and Transmission Line Siting Committee*, ARIZ. CORP. COMM'N, <http://www.azcc.gov/divisions/utilities/electric/linesiting-faqs.asp#m> (last visited Mar. 4, 2012).

Archeological surveys for solar plants in Arizona are reviewed by the Arizona State Historic Preservation Office. Before a thermal solar facility can be constructed there, the applicant must receive approval in the form of a Certificate of Environmental Compatibility from the Arizona Power Plant and Transmission Line Siting Committee of the Arizona Corporation Commission's Utilities Division. Factors considered by the Committee include:

("1. Existing plans of the state, local government and private entities for other developments at or in the vicinity of the proposed site 2. Fish, wildlife and plant life and associated forms of life upon which they are dependent. 3. Noise emission levels and interference with communication signals. 4. The proposed availability of the site to the public for recreational purposes, consistent with safety considerations and regulations. 5. Existing scenic areas, historic sites and structures or archaeological sites at or in the vicinity of the proposed site. 6. The total environment of the area. 7. The technical practicability of achieving a proposed objective and the previous experience with equipment and methods available for achieving a proposed objective. 8. The estimated cost of the facilities and site as proposed by the applicant and the estimated cost of the facilities and site as recommended by the

2. Mandates for approving plans for the use of “grey,” or effluent surface water and the treatment and recycling of that resource.¹²⁷ Water treatment facilities are of various magnitudes of complexity¹²⁸ and development expense, so the parties must allow a sufficient diligence period in order to quantify the additional burden of implementing water reclamation and treatment to serve the plant.¹²⁹
3. Mandates for approving well development and pumping capacity, in those instances where groundwater may be withdrawn for solar plant purposes.¹³⁰
4. Mandates for approving business plans that may entail scrutiny of the financial wherewithal of the prospective owners of the plant.¹³¹ In Arizona, the Arizona Power Authority has the prerogative to determine if a project or facility is “feasible and economically sound,” as well as “self-financing.”¹³²
5. Mandates for approving use and disturbance of land proximate to navigable waters.¹³³ This requires the approval under Section

committee, recognizing that any significant increase in costs represents a potential increase in the cost of electric energy to the customers or the applicant. 9. Any additional factors which require consideration under applicable federal and state laws pertaining to any such site.”). ARIZ. REV. STAT. ANN. § 40-360.06 (2011).

¹²⁷ See LEX HELIUS *supra* note 25, Ch. 6 (explaining that there are different types of criteria examined, including the projects impact on surface water).

¹²⁸ See MARICOPA COUNTY ZO, § 1301.1.21 (2012) (addressing separate special use permitting for “evaporation ponds and other appurtenances” in connection with electrical generating plants, which implicates an independent zoning process (and accompanying application fees and plans-check fees, besides the cost of engineering consultants)). Permits for required drinking water, together with sanitary and industrial wastewater permits in Maricopa County, are granted under the auspices of the Maricopa County Environmental Services Department and the Arizona Department of Environmental Quality. MARICOPA COUNTY ARIZ., MARICOPA COUNTY ENVIRONMENTAL HEALTH CODE ch. v, § 1, regulation 3 (2010) *available at* <http://www.maricopa.gov/EnvSvc/AboutUs/pdf/C5S1.PDF>.

¹²⁹ See LEX HELIUS, *supra* note 25, ch. 1 at 6.

¹³⁰ See *id.*

¹³¹ See *id.* ch. 7 at 1-9 (describing the financial processes and planning relevant to securing funding for solar projects).

¹³² See ARIZ. REV. STAT. ANN. § 30-123.01. California’s counterpart agency is the California Energy Commission, operating under the authority of CAL. PUB. RES. CODE §§ 25302, 25324, 25500 (West 2011).

¹³³ To the amazement of some land developers, the term “navigable waters” includes not only active streams but normally dry arroyos through which water occasionally may flow, if any such flow ultimately will end up in public waters like rivers, lakes, gulfs or reservoirs, pursuant to the Clean Water Act of 1977, 33 U.S.C.A. § 1362(7) (West 2011); *United States v. Phelps Dodge Corp.*, 391 F. Supp. 1181, 1187 (D. Ariz. 1975). Once navigable waters are deemed present, federal government permission is required before development in any manner diverts or holds back the natural course of water within the arroyo or attempts to dredge water actually flowing in the arroyo. This permission usually is

404 of the Clean Water Act,¹³⁴ which is monitored by the U.S. Army Corps of Engineers.¹³⁵

6. Mandates for approving use of publicly dedicated roads.¹³⁶
7. Mandates for use of public rights of way for transmission lines.¹³⁷
8. Mandates for dust control on the site.¹³⁸
9. Mandates for flood control, drainage and similar hydrology matters affecting a site.¹³⁹

obtained from the U.S. Army Corps of Eng'rs. Development of land resembling a bank of an arroyo may implicate control of the State if there is uncertainty about the location of the "ordinary high water mark," pursuant to the Submerged Lands Act of 1953. 43 U.S.C.A. § 1301 (West 2011).

¹³⁴ See 33 U.S.C.A. § 1344 (West 2011).

¹³⁵ See 33 C.F.R. §§ 320-32(2011) (setting forth the Corps of Eng'rs' regulations governing permits for dredged or fill material into waters of the United States and permits for structure in or affecting navigable waters).

¹³⁶ For example, significant traffic generation by a plant's personnel may implicate public right of way dedications. In Maricopa County, dedication of land for rights of way to needed road geometrics and width are the province of the County Department of Transportation. Rights of way that cross tribal lands in part complicate circumstances. *Strate v. A-1 Contractors*, 520 U.S. 438, 459 (1997) (limiting tribal jurisdiction with a BIA-issued right of way, leading some tribes to now systematically decline consent to BIA issued rights of way, consent that is required before the BIA can make such a grant).

¹³⁷ See ARIZ. CORP. COMM'N, *supra* note 130. In Arizona, this approval would engage the Arizona Power Plant and Transmission Line Siting Committee.

¹³⁸ To inhibit erosion potential, local governments may require soil stabilization measures and vegetation management plans. See MARICOPA COUNTY, ARIZ., AIR POLLUTION CONTROL RULES & REGULATIONS r. 310.01, § 302.5 (2010) available at http://www.maricopa.gov/aq/divisions/planning_analysis/rules/docs/310.01.pdf (establishing that for any vacant lot with a disturbed area (surface earth uncovered or modified from its native condition) greater than 500 square feet remains unused and undeveloped for more than 15 days, the owner must use a dust-control measure such as apply dust suppressants or surface gravel to limit the emission of dust from the tract. Once the ground is disturbed, the Maricopa County Planning and Development Department may require that the developer provides financial assurance in an amount and form acceptable to the department that the developer will restore or stabilize the entire site if the solar project is abandoned or becomes defunct). See REPORT TO THE BOARD OF SUPERVISORS, MARICOPA CNTY. PLANNING & DEV. DEP'T (May 11, 2011), available at <http://www.maricopa.gov/planning/PublicMeetings/docs/pdf/BOS/2011/05-11-2011/Z2009063%20AVSE%20BOS%20Short%20Report.pdf> (regarding Case No. Z2009063 (Arlington Valley Solar Energy Application for Special Use Permit for a PV Generation Facility)).

¹³⁹ See generally MARICOPA COUNTY ZO, *supra* note 3 at § 1205. Under the Maricopa County Drainage regulations, the Department of Planning and Development and the County Flood Control District must determine the propriety of on-site storm water retention and off-site storm water drainage both entering and leaving the land hosting the facility. A Floodplain Use Permit is required from the Floodplain Management and Services Division of the County Flood Control District before a developer may obtain a building permit within the one percent chance floodplain, also known as a 100-year floodplain. Additionally, a local government may require adherence to regulations governing construction – phase activities such as permitting under the National Pollution Discharge Elimination System Permit for Discharges of Storm-water Associated with Construction Activities, entailing a

10. Mandates for comprehensive land use plans compliance as of right or via plan amendment.¹⁴⁰

VI. FUNDAMENTAL INTERESTS OF POTENTIAL SOLAR FACILITY LEASE PARTIES

A. *Essential Needs for Generators Securing Solar Facilities' Sites*

1. These types of land circumstances are optimal for solar facilities developments:
 - a. Entirely vacant parcels of sufficient size to support a target megawatt output;¹⁴¹ alternatively, shared-use functions that will not interfere with the generator's solar technology installations and operations.¹⁴²
 - b. Proximate water and electrical infrastructure availability without unreasonable transaction costs.¹⁴³
 - c. Solar easements availability in an environment generally welcoming such encumbrances.¹⁴⁴

pollution prevention plan describing the practices to be used to reduce pollutants in storm water discharges from the construction site.

¹⁴⁰ See generally *id.* at § 1200. The Maricopa County Comprehensive Plan does not contemplate any solar facility in its general plan map; thus, a Comprehensive Plan Amendment is required in concert with specific rezoning either to the heavy industrial use (I-3) district or through a Special Use Permit in other underlying districts.

¹⁴¹ See LEX HELIUS, *supra* note 25, ch. 1 at 1. Solar projects are ideally leased when the landowner conducts minimal or no activities on the property; unthreatening "partners" to solar installations include dry farming and grazing of small animal herds that are insufficiently powerful to vandalize the panels or other solar apparatus.

¹⁴² *Id.* ch. 1 at 3.

¹⁴³ *Id.* ch. 5 at 4 (establishing that mere availability of water is insufficient due diligence. Essential inquiries include: Where is the water coming from and what is the initial purity of the source? Who has prior rights to the water, if anyone? What water laws and private restrictions affect the ability to receive water for the project? If well or surface diversion of water is implicated, what permits and licenses are needed and at what cost in delay and out of pocket expense? How does water use permitting dovetail with environmental constraints and extend the time for environmental impact review?).

¹⁴⁴ See CAL. CIV. CODE § 804 (2011). States are facilitators of such easement-acquisition, so that the generator may be protected from a neighboring owner who might otherwise interfere with solar access after the facility is operational. For example, in California, legislation recognizes neighboring property owners' rights to voluntarily grant such easements; see also CAL. CIV. CODE § 801.5 (2011). While in Colorado, Nevada, New Mexico and Utah, solar easements are embedded in a broader statutory context, see COLO. REV. STAT. §§ 38-32.5 to 100.3,103 (2011); NEV. REV. STAT. §§ 111.370-380 (2011); N.M. STAT. ANN. § 47-3-1 (West 2011); UTAH CODE ANN. §§ 57-13-1 to 2 (2011). This does not mean, however, that states are *laissez faire* in their approach to such easements; in California and Colorado, for example, there is sensitivity to height and design-character issues. An impressive compendium of state statutory regimes on solar easements and other governance through 2005 is found in, Susan Lyons, *Renewable Energy Law – A Bibliography*, 24 LEGAL REFERENCE SERVICES Q. 143

- d. Tract market value depressed for alternative uses.¹⁴⁵
 - e. Favorable state or local taxes, loans, or other financial incentives in the jurisdiction.¹⁴⁶
 - f. No historic or archaeological resources present, or those perceived are of little worth.¹⁴⁷
 - g. Limited or no mineral rights implicating subsurface development that will impede installation of solar facilities and access roads.¹⁴⁸
2. The scenarios for facility development agreements preferred by tenant operators of commercial solar facilities on vacant land include the following, in order of preference:
 - a. Lease agreements: A ground lease agreement is likely the most viable choice of transaction structure. It is familiar to financiers and to taxing authorities alike. The concept of leasing includes the concept of absolute control by the facilities' operator (and exclusion of others) for the period of the lease term.¹⁴⁹ The lease will typically be coupled with a prior option to lease, affording the prospective tenant the ability to limit payments to the landlord in advance of the commencement of power generation yet maintaining exclusive control over the property's use for some finite term.¹⁵⁰

(2005)

available

at

<https://wiki.umn.edu/pub/ESPM3241W/S11PolicyBriefTeamFourteen/902815904.pdf>.

¹⁴⁵ The obvious advantage of tracts having few alternative uses is the favorability in rent price to the tenant. However, it bears recalling that low alternative use options perhaps are a function of other issues such as high wind conditions that may threaten the solar PV array or an unreliable supply of water or service electricity.

¹⁴⁶ See DSIRE, *supra* note 48; Larry R. Garrison, *Going "Green": State Tax Incentives and Alternative Energy – an Update*, 29 J. ST. TAX'N 15 (May/June 2011) (state by state summary); Sara C. Bronin, *Modern Lights*, 80 U. COLO. L. REV. 881, 883 (selected state incentive programs described). States that offer state tax credits applicable to installing solar energy equipment include California and Oregon.

¹⁴⁷ See National Historic Preservation Act, P.L. 89-665, 80 Stat. 917; § 106, which requires the referenced assessment, is codified at 16 U.S.C. § 470f; and the pertinent assessment regulations begin at 36 C.F.R. § 800.3.

¹⁴⁸ See *supra* text accompanying note 37.

¹⁴⁹ See BLACK'S LAW DICTIONARY 898-900 (7th ed. 1999) (definition of lease).

¹⁵⁰ See generally *Option to Lease Forms*, USLEGALFORMS.COM, <http://www.uslegalforms.com/landlordtenant/leaseoption/> (last visited Mar. 4, 2012).

- b. Easement agreements: Some solar facilities operate under easements grants, but these use rights are less certain. Some concerns with these agreements are whether the easement is for the exclusive use of the facility operator or is a non-exclusive access right and whether the easement is for all the generator's contemplated uses or is subject to use opposed to potential undermining by the fee owner or owners of subsurface.¹⁵¹ Since the servient owner-grantor maintains all the uses any fee owner has, subject to the superior right of the dominant owner and to the extent tempered in the grant, the servient owner may use his land in any way that arguably does not interfere with the solar facilities; thus, there is more need for the easement estate owners to interact and cooperate than may be desirable to the generator or a potential lender.¹⁵²
- c. Licenses coupled with an interest: A few solar facilities may choose to operate under an owner's permission for preliminary exploration of a site. However, risking operation of the installed facilities under a license is ill-advised in jurisdictions where the at-will revocability of the landlord's authorization for the generator to use the tract is debatable.¹⁵³
3. The following are fundamental leasing needs of solar facilities tenants:
- a. Time for feasibility analysis: The promise of myriad tax credits, rebates and other savings and revenue incentives

¹⁵¹ See John W. Weaver, *Easements Are Nuisances*, 25 REAL PROP. PROB. & TR. J. 103, 106 (1990-91).

¹⁵² *Id.* at 107.

¹⁵³ See, e.g., the principles of real property licensing illustrated by *Ulan v. Vend-A-Coin, Inc.*, 27 Ariz. App. 713, 716 (Ariz. Ct. App. 1976) (stating that the general rule is that a license, not subject to a specific exception, is revoked *ipso facto* by the licensor's conveyance of the land, or by his doing any act inconsistent with the use of the license. An "executed license" exception requires a licensee expense for substantial improvements of a permanent rather than temporary nature; and a relatively small expenditure for a permanent improvement (e.g., a pipe), cannot support the existence of an executed license); *Hammond v. Klonowski*, No. E-00-044, 2001 WL 740103, at *8 (Ohio Ct. App. June 29, 2001) (a license coupled with an interest arises if the parties intended the agreement to grant permanent and perpetual right to do an act on the land of the licensor rather than a mere privilege); *Gates v. Williams*, No. E2010-01192-COA-R3-CV, 2011 WL 683935, at *6 (Tenn. Ct. App. Feb. 28, 2011) (before being estopped to revoke a license coupled with an interest, the licensor may elect to pay the reasonable value of the improvements made by the licensee, thereby "redeeming" the license grant). Under these types of fluid legal standards, facilities installed pursuant to a license coupled with an interest likely will not support debt financing.

aside, the prospective tenant balances a number of “moving parts” in joining stakeholders to develop a solar generating facility. The developer must obtain a purchase commitment from a customer for the electricity to be generated, along with sufficient preliminary assurances of governmental intent to approve the project, in order to be willing to incur the substantial out of pocket due diligence costs; yet the due diligence must occur in some preliminary magnitude to coax indications of affirmative government inclinations. Numerous development questions must be answered affirmatively to bolster the developer’s confidence, such as confirming the proximity of electrical transmission lines and sufficient available capacity, along with projected time awaiting the project’s integration into the grid.¹⁵⁴ If no lines exist, the developer must become confident about when transmission lines will become available as well as with his cost to access the lines when they are ready.¹⁵⁵ Without indications of official intent to grant approvals and a contract with a reliable, long-term power purchaser in hand, the heavy up-front financing required for a commercial scale solar project cannot be secured.¹⁵⁶ Equity investment is scarce without assurances of forthcoming financing and even with that promise; initial outlays for commercial scale projects are measured in the tens of millions of dollars. With these contingent elements concurrently demanding attention of the developer, it is no mystery that the prospective tenant seeks sufficient time and sufficient control of the potential facility site to investigate and strategize about the project.

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¹⁵⁴ IMPACTS OF SOLAR ENERGY DEVELOPMENT AND POTENTIAL MITIGATION FACTORS (2010) available at http://solareis.anl.gov/documents/dpeis/Solar_DPEIS_Chapter_5.pdf.

¹⁵⁵ See FRISVOLD ET AL., *supra* note 5 (noting that an important development constraint in Arizona and New Mexico is that while relatively level, large contiguous public land tracts are available for solar facilities’ permitting, access to the transmission grid is limited, because these prime areas are so remote they will not be proximate to existing electric transmission lines until transmission capacity expands to catch up with the load. Fortunately for Arizona, major power lines pass near many areas with the highest solar radiation potential).

¹⁵⁶ *SunShot Initiative: Reducing Financing and Contracting Costs for Solar Installations*, U.S. DEP’T OF ENERGY, http://www1.eere.energy.gov/solar/sunshot/financing_contracting_costs.html (last visited Mar. 4, 2012).

¹⁵⁷ Often, the landlord feels that these tenant controls over “go or no go” timing belong entirely in a preliminary option agreement. Accordingly, when the tenant’s option is exercised the “off-ramping” must cease, and the tenant must commit to performing for the term of the lease. The concept of a due diligence period is discussed *infra* app. A, para. 2.

- b. Landlord covenants of cooperation and conveyance: The developer will require the landlord to agree to grant necessary easements for constructing and operating the facilities, including items like transmission line traversal.¹⁵⁸ Developers uniformly desire a landlord's covenant not to interfere with the path of sunlight across the leasehold tract or otherwise to act to decrease the production capabilities of the solar equipment. These promises are realized in a covenant of quiet enjoyment.¹⁵⁹ In addition, the developer must have the ongoing cooperation of the landlord, not just in the initial entitlement and permitting processes, but also in contesting tax assessments upon the leased tract.¹⁶⁰ Finally, the tenant may seek the landlord's covenant that the facility belongs to the tenant through the conclusion of the lease term and that it does not, by installation, constitute a fixture.¹⁶¹
- c. Non-disturbance covenants and grants of easements and related use prerogatives: The developer will want to seek non-disturbance agreements from any mortgagees of the landowner,¹⁶² and will desire a lien on the leased property for the needed debt component of the project's cost.¹⁶³ Solar project financiers are likely to require broad

¹⁵⁸ From the landlord's perspective, these are items entitling it to reasonable additional compensation; and the easements must have both a definitive lapse date and a non-exclusive character, especially those for vehicular access. *See, e.g., infra* app. A, para. 6(b), (f).

¹⁵⁹ Of course, the covenant cannot include an express or implied warranty that the solar properties of the tract are "adequate" for tenant's intended use; nor should the covenant extend beyond intentional interference, unless the definition of "interference" is comfortably free (to the landlord) of inference that any disruption of solar power generation is the fault of the landlord. The landlord must weigh the impact of such a provision or covenant on the usability of the land for every other purpose in evaluating whether the rent is sufficiently great to "keep off the market" the entire tract. Compensation should be tied to the inutility of the portions of the leased land unoccupied by the tenant's equipment. Finally, the non-disturbance covenant should be mutual; nothing the tenant does on the leased tract should compromise or impair materially the utility of surrounding land. The non-interference of Landlord with sunlight is addressed in Paragraph 6(f), and quiet enjoyment is promised by Landlord in Paragraph 15(b) of Appendix A, *infra*. Solar easements likely be the subject of a recorded instrument, and the parties may agree to include this concept in a recorded lease memorandum.

¹⁶⁰ Logically, the landlord will want the tenant's agreement to give prior notice of any proposed changes to the tract, whether physically or administratively that affects the utility or the market value of the land. *See, e.g., infra* app. A, para. 5.

¹⁶¹ The landlord usually will not oppose such a request, especially if the technology is likely to be so obsolete that, at the term's expiration, to all intents and purposes the solar panels are "junk" worthy only of removal and recycling or proper disposal. *See, e.g., infra* app. A, para. 6(a).

¹⁶² The landlord will not want an absolute commitment to accomplish such matters but only an obligation of good faith effort to obtain non-disturbance or subordination covenants from parties it ultimately cannot control. In addition, if a cost is associated with obtaining "cover" for the tenant from a landlord mortgagee or another lien-holder, the landlord should be reimbursed by the tenant for that expense.

¹⁶³ *See infra* app. A, paras. 8(a), 14.

agreements allowing a lender to assume the developer's role in the operation of the project, in concert with the lease obligations, should the borrower default allowing the lender to sell the equipment to satisfy the debt. In addition to demanding notice of the tenant's defaults, the lender will seek cure rights beyond those afforded the tenant,¹⁶⁴ and should the lease be rejected in the tenant's eventual bankruptcy, the right to make a lease directly with the landlord on the same terms as contained in the original lease. In concert with the foregoing, the lender will push for limitations on the lease parties' ability to modify the ground lease without the lender's prior consent.¹⁶⁵ The prospective tenant will also want the ability to obtain solar easements from the owners of abutting parcels of land; to the extent there is the possibility of interference with the facility's array.

- d. Free assignability¹⁶⁶ and subleasing rights¹⁶⁷ for unused portions of the leased premises.
- e. Lease termination rights, triggered by low profitability and measured against the investment criteria of the tenant.¹⁶⁸ Even after its option has been exercised by the tenant,

¹⁶⁴ At a minimum, the lender will demand the right to have a longer period to cure than the tenant if the cure requires more than the payment of money, and if the lender has commenced a cure within a reasonable period of time. This occasionally will be fleshed out in the lease. More frequently, however, such arrangements will be documented in a non-disturbance and attornment-type agreement directly between the lender and the landlord. *See infra* app. A, para. 14.

¹⁶⁵ To this demand, the landlord will indicate its willingness to forego entering into a modification that materially reduces the rights or remedies of the lender or jeopardizes the security of the lender's liens against the equipment and other facilities. Reciprocally, a landlord reasonably could request that the tenant prove the lender has consented to any form of modification of the lease as a condition to the landlord's good faith cooperation obligation. Once again, a bilateral agreement between the facilities' lender and the landlord will describe their respective obligations to each other.

¹⁶⁶ The assignability dimension of the lease arises due to the likely presence of the option in the power purchaser to acquire the solar installation at some defined point during the PPA term, which typically begins as early as the 10th year of the lease term or, if sooner, when the term naturally expires. *See LEX HELIUS, supra* note 25, ch. 2 at 7; *see also infra* app. A, para. 14.

¹⁶⁷ The sublease feature is critical to the developer as it may intend to lease unused portions of the site for another purpose, such as wind power generation, to maximize the return on its leasing investment. From the landlord perspective, this may implicate the need for a right of first refusal to sublease or alternatively the right to terminate the lease as to those portions described in the proposed sublease (recapture, if you will). In all events, depending on the nature of the uses on abutting tracts, the landlord may desire some right, exercising reasonable judgment, to approve the sublease use, perhaps except when it is identical to the primary use of the parcel or is related to its purposes. In turn, should the tenant be amenable to a right of first refusal, the terms of that right would include the prohibition on a competing use (another solar operator) or one that disturbs in any material manner the generation of solar energy. *See generally* LEX HELIUS, *supra* note 25, ch. 7.

¹⁶⁸ *E.g., infra* app. A, para. 9.

triggering lease commencement, the tenant likely will desire such a unilateral off-ramp.¹⁶⁹

B. Fundamental Landlord Needs in Ground Leases

1. Rent Payment Assurance

Perhaps the most vital need of the landlord is securing the right to be paid fairly for the leasehold during the entire term. There are a variety of means to achieve fair compensation, ranging from a “royalty payment,” or a percentage of electricity sales,¹⁷⁰ to a cost-of-living driven rent adjustment,¹⁷¹ to a “most favored nation” clause ensuring that the per-unit measurement of rent¹⁷² paid by the tenant shall not sink below a benchmark tied to compensation paid to other landlords of the tenant, or affiliates of the tenant in the relevant market. In particular, a marked increase in the volume of energy produced on the premises, caused by greater efficiencies in generation technologies, ought to increase the compensation paid by the tenant.¹⁷³ Another need, directly related to the issue of rent payment, is to obtain guarantees of payment and performance from principals of the developer or the solar venture partners that will not be subordinate to the obligations of the facility’s financier, which would perhaps render those

¹⁶⁹ In the event the landlord will accede to this demand, it will be coupled, in all likelihood, with the tenant’s covenants to pay all the landlord’s sunk costs (such as attorneys’ fees and brokerage commissions incurred) and a breakup fee in a sufficient amount to permit the landlord to chart a new course for using his property. *Id.*

¹⁷⁰ The author contemplates something like landlord receipt of a percentage of gross revenues received by the developer. Naturally, the tenant will resist this unless it is understood that there is no tenant obligation to generate any revenues and no representation or warranty that the project will be profitable or even will commence operation. *E.g., infra* app. A, para. 4.

¹⁷¹ The most recognized metric is one of the several varieties of the Consumer Price Index maintained by the Bureau of Labor Statistics of the Department of the Interior. *See Consumer Price Index*, BUREAU OF LABOR STATISTICS, <http://www.bls.gov/cpi/> (last visited Mar. 4, 2012).

¹⁷² This will be calculated, for example, by the acre, by the MW of electricity generated by the facility or by the mile of transmission lines crossing the land leased (or subject to an accompanying easement). *See, e.g., infra* app. A, para. 4.

¹⁷³ While a landlord should be able to negotiate as part of the initial lease bargain higher rent for a tract that will have increased numbers of transmission lines or generating units under current technologies, there is some likelihood that new technologies will permit more solar-gathering devices (or more efficient ones) to be installed in the identical square footage of leased space. In a thirty or more-year lease term, the likelihood of increasing reliability and lower cost through technological innovations is quite high. *See supra* text accompanying notes 18-22. Should the landlord who negotiates on price for a 12 MW facility receive no more rent should the technology later permit the generation of 24 MW on the same tract? The tenant in fairness must be allowed to recover the cost of removing the old technology and purchasing and installing the new technology, with any increase in rent to abide (or perhaps to be phased in during) the tenant’s recoupment of the out of pocket costs. Otherwise, the landlord may do better in the longer term to limit cap MW generation at the initial lease price and require the tenant to renegotiate the lease when it desires to replace the first generation technology installed at lease inception, a concept expected to meet considerable resistance from the proposed tenant. *Cf. infra* app. A, para. 4.

guarantees functionally illusory.¹⁷⁴ In this circumstance, the landlord may seek some form of security posted by the tenant sufficient to ensure performance of two items.¹⁷⁵ First is the payment of rent owed through the date of termination of the lease, especially where the tenant has negotiated a right of lease termination upon relatively short notice. The second is to backstop the facility's removal and land surface restoration obligations, whether arising prior to lease expiration, such as when the tenant determines that the facility's useful life has lapsed and the incentive to upgrade is too marginal, or upon the expiration of the scheduled lease term when the tenant's temptation to abandon a site covered with obsolete facilities is greatest.¹⁷⁶

2. Indemnification Rights in Restoration and Compliance Matters

Landlords require indemnification from the acts, or failures to act, of the ground tenant, especially when environmental laws are involved and the tenant fails to remove the facilities and restore the premises to its pre-existing condition at the conclusion of the lease term.¹⁷⁷ Three factors demand consideration here. One factor reality is that the tenant, likely a single purpose entity, may have few assets to pursue should there be a massive failure in surrendering the premises to the landlord in good repair and free from environmental problems.¹⁷⁸ The second factor is that dismantling the solar facilities and the restoring of the property for future use may present a daunting financial burden that has not been anticipated by withholding from distributions of ground rent to the landlord's principals, if the landlord was confident that the tenant would perform the surrender covenants.¹⁷⁹ The third factor is that an insolvent facility operator has little incentive to follow through on its covenants so long as it believes that its own principals are judgment-proof.¹⁸⁰ For this reason, landlords should demand some financial assurance of performance of clean up and removal of tenant facilities obligations, ideally via personal guarantees of creditworthy individuals who likely will survive the conclusion of the lease term.¹⁸¹

¹⁷⁴ See, e.g., *infra* app. A, para. 4.

¹⁷⁵ See, e.g., *infra* app. A, para. 9.

¹⁷⁶ An irrevocable letter of credit featuring an "evergreen" clause, a performance bond, negotiable securities held under a safekeeping agreement (or accompanied by a power of attorney) or a lien on some valuable property asset illustrate myriad possibilities for security for the removal of tenant facilities and restoration of the leased premises. See, e.g., *infra* app. A, paras. 9, 13.

¹⁷⁷ See, e.g., *infra* app. A, para. 9.

¹⁷⁸ See *id.*

¹⁷⁹ See *infra* app. A, para. 13.

¹⁸⁰ See *infra* app. A, para. 9.

¹⁸¹ See *infra* app. A, paras. 9, 13.

Armed with sufficient knowledge of the material physical and regulatory dimensions affecting the stakeholders and leasing parties as well as the proposed solar energy generation project, the prospective landlord and tenant are primed to review a proposed form of lease. A form of such lease follows. It does not address every conceivable issue between landlord and tenant in a ground leasing scenario, but it is intended to provide sufficient clauses to enable the reader to recognize what should be added or fleshed out in its twenty paragraphs, in order fairly to represent the fundamental needs of both lease parties. To inject realism while eliminating ambiguity, the form contemplates a generator desiring to supply electricity under a PPA to a county school located a short distance from the solar facilities via private transmission lines across land owned by the landlord. The owner of the leased premises is not the county school PPA customer. The author has this advice to those tempted to invest too heavily in the provisions included: *Caveat emptor*.

APPENDIX

GROUND LEASE AGREEMENT

This GROUND LEASE AGREEMENT (“**Agreement**”) is dated as of _____, 201__, by _____, (“**Tenant**”) and _____, (“**Landlord**”).

RECITALS

A. Landlord has identified a surface area of land on which a solar array for the generation of energy can be located, which surface area is not needed for other public purposes as of the date of this Agreement.

B. Tenant desires to develop and operate a solar photovoltaic array [concentrating solar facility] on said surface area for the purposes of supplying a renewable form of energy in [geographic location] and in particular to a [jurisdiction] County school, as set forth below.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant (together, the “**Parties**”) agree as follows:

AGREEMENT:

1. **Premises.** Landlord owns a parcel of land located at [coordinates], commonly known as [street number or RFD] Road [postal address] [state] (the “**Land**”). The Land is more particularly described in *Exhibit A* attached hereto. Subject to all provisions, terms and conditions of this Agreement, including without limitation Paragraph 2 below, “Effective Date/Due Diligence Period”, Landlord leases to Tenant and Tenant leases from Landlord approximately [quantity] square feet of the surface of the Land (the “**Premises**”), as more particularly described and shown in *Exhibit B* attached hereto. The Premises includes Landlord’s exclusive solar easement (subject to avigation rights) to Tenant for the use of the air

space above the surface of the Premises; and all water rights of any nature that accompany ownership of the Land. Tenant accepts the property aforementioned in “as is” and “where is” condition, with all defects and shortcomings; Landlord does not represent or warrant that the Permitted Use (as defined below) shall in fact be operational upon the Premises, nor that Landlord has knowledge as to the types of consents Tenant must obtain in order to operate under the Permitted Use.

2. Effective Date/Due Diligence Period. This Agreement shall be effective on the date that all of the following have been satisfied: (i) the Board of [governing body name] of [jurisdiction] County has approved the Agreement, (ii) the Tenant has entered into or caused to be entered into the PPA (defined below) providing for the sale and purchase of the solar energy, with such agreement containing no termination penalties related thereto, and (iii) both parties sign this Agreement (the “**Effective Date**”). Beginning on the Effective Date and continuing until the Term Commencement Date, defined in Paragraph 3 below, (the “**Due Diligence Period**”), Tenant is only permitted to enter the Premises for the limited purpose of making appropriate engineering and boundary surveys, inspections, and other reasonably necessary investigations and signal, topographical, geotechnical, structural and environmental tests (collectively the “**Investigations and Tests**”) that Tenant may deem necessary or desirable to determine the physical condition, feasibility and suitability of the Premises for the intended use. If Tenant determines, during the Due Diligence Period, that the Premises is not appropriate for Tenant’s intended use, or if for any other reason, or no reason, Tenant decides not to commence its tenancy of the Premises, then Tenant has the right to terminate this Agreement without penalty upon written notice to Landlord at any time during the Due Diligence Period and prior to the Term Commencement Date. Landlord and Tenant expressly acknowledge and agree that Tenant’s access to the Premises during this Due Diligence Period is solely for the limited purpose of performing the Investigations and Tests. Notwithstanding anything to the contrary contained herein, Tenant shall not do any digging or soil borings on the Premises without the prior written consent of Landlord, which consent may be withheld in the sole and absolute subjective discretion of Landlord. Thus, Tenant shall comply with all digging and testing requirements and procedures (collectively “**Requirements and Procedures**”) set forth in *Exhibit C* attached hereto.

Tenant shall provide notice to Landlord at least forty-eight (48) hours prior to any planned entry and Landlord shall have the right to be present during all entries. Tenant's entry upon the Premises during the Due Diligence Period shall be limited to the hours between 8:00 a.m. – 5:00 p.m., Monday through Friday.

All entries and inspections shall be at Tenant's sole cost and risk. Tenant shall indemnify, defend and hold harmless Landlord from and against all claims, actions, losses, damages, or expenses, of whatever kind or nature, including without limitation reasonable attorney's fees, arising out of such entries and inspections. Tenant shall restore the Premises and Land to the condition existing prior to Tenant's first entry upon the Premises and Land, subject to normal wear and tear. All obligations and liabilities arising under this Paragraph shall survive any termination or breach of this Agreement. Tenant shall use all reasonable efforts not to cause damage to the Premises and Land.

The parties understand and agree that Tenant shall be solely responsible for (and the effectiveness of this Agreement is conditioned upon Tenant's agreement to fund at its sole expense):

- Obtaining all approvals, licenses and permits needed to operate the permitted use; among these are approvals from the [state's name] Power Authority and, if the Tenant is obtaining a loan guaranty from the federal DOE, from all federal and State of [state's name] agencies with coordinating jurisdiction over the ongoing operation;
- Obtaining all approvals, licenses and permits needed to operate a solar photovoltaic project located on land within [name] County; and among these are the County Transportation Department, [name] County Air Quality Control, County Planning and Development, County Environmental Services, and County Flood Control District.

The parties agree that the foregoing is not intended to be a comprehensive list of agencies from whom permission to proceed is needed. The "sole responsibility" contemplated by the parties obligates Tenant to pay all application and permit fees and to satisfy, at Tenant's sole expense, every requirement of these agencies, irrespective of the success of Tenant's applications for approvals and permits or Tenant's obtaining a final PPA. All such expenses shall be paid in advance by Tenant so that there is no

recurring obligation attaching to the owner of the land other than in connection with the payment of ad valorem taxes on the Land.

3. **Term.** The term of Tenant's tenancy commences upon the start of construction of the Tenant Facilities (defined in Paragraph 6(a) below) or twelve (12) months following the Effective Date, whichever first occurs (the "**Term Commencement Date**") and terminates on the [anniversary number] anniversary of the Term Commencement Date (the "**Term**") unless otherwise terminated earlier in accordance with this Agreement. As long as there has been no default under this Agreement or any "**Project Agreements**" (collectively, the **Construction Documents** (defined below), the PPA, and any other agreement entered into by Landlord, Tenant, the Customer (defined below) and/or the Board of Education of [jurisdiction] County), then Tenant has the right to extend the Term for [quantity] successive [duration] year periods (the "**Renewal Term**"), subject to the Landlord's early termination rights. Tenant shall deliver to Landlord written notice of its election to exercise its renewal right no earlier than eight (8) months and no later than six (6) months prior to the expiration of the then current term. Each renewal is on the same terms and conditions as set forth in this Agreement, except that the amount of Rent may increase, at the Landlord's discretion, and the option to renew for additional Terms may be removed.

Tenant shall use commercially reasonable efforts to cause the installation of the Tenant Facilities (as defined below) to commence on or before [month and day], [year]; provided, however, in the event that the necessary financing, permits, authorities and agreements contemplated among the tasks to be performed during the Due Diligence Period are not obtained by the conclusion of the Due Diligence Period, Tenant shall have the option to terminate this Agreement by giving written notice to Landlord, without triggering the default provisions of this Agreement or any Tenant liability under this Agreement. Upon the receipt of such notice by Landlord, this Agreement shall be deemed terminated and the Parties shall have no further obligation to each other, except that Tenant shall remain liable under this Agreement for the performance of all the following: (i) restoration of the Premises and the Land, to the extent either have been disturbed by Tenant, to their prior existing condition, (ii) reimbursement to Landlord for any broker's commissions or fees paid to third party brokers in connection with

this Agreement, and (iii) removal from the Premises and Land of all (A) easements, liens and other encumbrances that may have been recorded during the Due Diligence Period and (B) all of Tenant's equipment and other property have been removed from the Premises and the Land.

In the event that during the Term the Permitted Use is adjudicated to be a public or private nuisance or leads to the termination of licensing or permitting of the Tenant Facilities by a governmental authority, or an order of any such authority mandating the removal of the technology has been entered, Tenant shall have the right to terminate this Agreement upon 90 days prior written notice to Landlord. The previous sentence notwithstanding, this Agreement shall continue in effect, and Rent and other charges reserved under this Agreement shall continue to accrue (with all interest and late fees likewise to continue accruing), until the business day next following the day that the last piece of the Tenant's fixtures, equipment and vehicles has been removed from the Land together with all litter, debris and detritus connected with the digging or jack-hammering out of all foundations used to secure the solar apparatus or foundations of buildings (to a depth of 12" below the natural grade of the Land). **The parties expressly agree that Tenant is absolutely obligated in all events to remove all property of Tenant or third party invitees from the Premises and the Land (and disguise to a commercially reasonable degree all evidence of development upon the Premises and the Land) at its sole expense as an express condition of the natural expiration of, or of Landlord's obligation to terminate, this Agreement and discharge the obligation to pay Rent and all other charges under this Agreement.**

4. **Rent.** On the Term Commencement Date and on the first day of each month thereafter, without notice, demand, deduction or setoff, Tenant shall pay to Landlord, in advance, as annual rent [quantity] Dollars (\$quantity) (the "**Rent**"), in twelve (12) equal monthly installments. Rent for any fractional month at the beginning or at the end of the Term or Renewal Term will be prorated. Rent shall be payable to Landlord at [address]. The Rent reserved in this Agreement is calculated based upon the parties' agreement that the solar plant shall not generate in excess of [quantity] MW or [quantity] MWh per year (the "**maximum output**"). In the event that Tenant's operation leads to the generation of additional electricity in excess of the maximum output, Landlord shall receive a percentage of the revenue generated above the maximum output, based

upon the following increasing-capacity sliding scale: [*chart of additional rent to be provided here*].

5. Use. The Premises shall be used solely for the construction, operation and maintenance of a [photovoltaic] [concentrating solar] system pursuant to a Solar Power and Services Agreement (the “PPA”) between Tenant and [name of school] (the “Customer”) and pursuant to the Requirements and Procedures (the “Permitted Use”). The Tenant hereby is permitted to grant a license under this Agreement or to assign this Agreement to the Customer to own, operate and maintain the Tenant Facilities on the Premises. The parties agree that all rights available to and all obligations and liabilities of Tenant under this Agreement shall inure to the benefit of and be binding upon the Customer if either a license agreement is entered into or this Agreement is assigned to the Customer. From and after the Term Commencement Date, the Premises will be used exclusively by Tenant and Customer for the sole purpose of supplying solar power energy services first to the Customer, second to other sites in the sole election of Tenant and Customer, if any, and third (if applicable) to the grid. Expressly, but not by way of limitation, Tenant acknowledges that Tenant shall not use, or allow the use of, any portion of the Land for wind power generation or for outdoor advertising structures, nor for any other activity not pertinent to the Permitted Use. The site plan attached to this Agreement captioned *Exhibit B* represents the intended layout of the Tenant Facilities, along with the ingress and egress points onto the Premises from [thoroughfare]. Landlord agrees on an ongoing basis to reasonably cooperate with Tenant, at Tenant’s sole cost and expense, in making application for and obtaining all licenses, permits and any and all other necessary approvals that may be required for the Permitted Use; provided, however, (i) Landlord shall incur no costs in so doing, and (ii) Tenant first must obtain from Landlord consent for the activity implicated by the approvals, which consent shall not unreasonably be withheld or delayed.

6. Facilities; Utilities; Access.

(a) Subject to the Requirements and Procedures and the Landlord’s approval, which approval may be withheld in the sole and absolute discretion of the Landlord, Tenant has the right to construct, erect, install, maintain, test, replace, remove, operate and upgrade on the Premises a solar photovoltaic system, including without limitation photovoltaic

panels, fencing, mounting assemblies, inverters, converters, metering, lighting fixtures, transformers, ballasts, disconnects, combiners, switches, wiring devices, wiring, wire kits and data monitoring systems (“**Tenant Facilities**”). In connection therewith, Tenant will present construction drawings, plans and specifications, and a construction schedule to Landlord for review and approval of all work necessary to prepare, operate and maintain the Premises for Tenant Facilities (collectively the “**Construction Documents**”). All of Tenant’s construction and installation work must be performed at Tenant’s sole cost and expense, in accordance with the Construction Documents, and in a good and workmanlike manner. Tenant holds title to the Tenant Facilities and all of the Tenant Facilities must remain Tenant’s personal property and are not fixtures, except in the event that Landlord exercises its option rights to purchase Tenant Facilities. Upon the expiration or earlier termination of this Agreement, Tenant must remove the Tenant Facilities from the Premises and restore the Premises and Land to substantially its original condition, including without limitation grading the Premises and Land to the topography existing before construction of Tenant Facilities and restoring grass and landscaping.

(b) On and after the Term Commencement Date, Tenant, Tenant’s employees, agents and contractors shall have reasonable access to the Premises between the hours of 7:00 a.m. – 7:00 p.m., and except in the event of an emergency, Tenant shall provide notice to Landlord twenty-four (24) hours prior to entering the Premises. In the event of an emergency, Tenant shall notify Landlord immediately at [phone number] and Landlord shall have immediate access to the Premises during the emergency period twenty-four (24) hours a day, seven (7) days a week. Landlord grants to Tenant, and Tenant’s agents, employees and contractors, a non-exclusive right and easement for pedestrian and any vehicular traffic, including, but not limited to, construction vehicles and vehicles to transport construction vehicles and equipment, ingress and egress across the Land, by virtue of the easement described and shown in *Exhibit B*.

(c) Landlord will use reasonable efforts to maintain all access roadways from the nearest public roadway to the Premises in a manner sufficient to allow pedestrian and any vehicular, including, but not limited to, construction vehicles, access at all times under normal weather conditions when Tenant is permitted access hereunder. Landlord will maintain and repair such roadways, at its sole expense, based on Landlord’s normal use of the roadways. In the event that Tenant’s use of the roadways requires

maintenance and repair beyond Landlord's normal maintenance and repair or as a result of damage caused by Tenant's use, then Landlord shall invoice Tenant and Tenant, within thirty (30) days of such invoice, shall pay Landlord for invoiced all costs and expenses related to the repair and/or replacement of such roadways. Tenant hereby waives all rights to dispute such invoices and accepts sole liability for all costs that may be included therein. Notwithstanding the foregoing, upon Landlord's approval, which approval may be withheld in the sole and absolute subjective discretion of Landlord, Tenant may construct an access road to the Premises ("**Access Road**"), across the Land as more fully described and shown in *Exhibit B*, if Tenant reasonably determines such Access Road is necessary for Tenant's ingress to and egress from the Premises. Tenant is entirely responsible for construction, maintaining, repairing, and, if required, removing such Access Road until the expiration or earlier termination of this Agreement, at its sole cost and expense. If the construction of the Access Road is approved, then Tenant shall follow the Requirements and Procedures and all additional terms and conditions set forth by the Landlord. Landlord reserves the right (without obligation) in its sole discretion to authorize other uses of the Land that do not unreasonably interfere with the Permitted Use.

(d) Landlord shall provide a staging area on the Land for the temporary storage and staging of tools, materials and equipment and for the parking of construction crew vehicles and temporary construction trailers and facilities reasonably necessary during the installation, operations or removal of the Tenant Facilities, and access for rigging and material handling. After construction of the Tenant Facilities is complete, Tenant, at its sole cost and expense, shall restore said staging area substantially to its original condition.

(e) Tenant shall provide Landlord a written progress report of construction/installation on a bi-weekly basis; however, Tenant will inform the Landlord within the hour of any activities that materially may impair or damage the Land, and/or underlying membranes or caps. Tenant bears sole liability for all costs associated with any repair to the Land. The Tenant, at its sole cost and expense, shall restore/repair the Land, including all membranes and caps thereunder, to its original condition.

(f) Upon Landlord's prior written consent, Tenant, at its sole cost and expense, may take all actions necessary or reasonable to (i) prevent other buildings, structures or flora on the Premises or the Land from overshadowing or otherwise blocking access of sunlight to the Tenant Facilities, (ii) acquire any other easement, waiver, or amendment of an

existing easement reasonably required for the installation of the Tenant Facilities on the Premises (including without limitation installing and gathering transmission and distribution cables, pipelines and related appurtenances as necessary for full enjoyment of the Premises), and (iii) obtain assurance that there are no undisclosed material easements or restrictive covenants that could reasonably affect the Tenant Facilities. Such Tenant Facilities' easements shall be granted by Landlord (A) upon Landlord's approval of associated plans evidencing Tenant's (x) need for such improvements and (y) situating the easements in locations that least intrude on the usability of the Land; and (B) conditioned upon Tenant's covenants (I) not to assign the easements other than to its contractors, (II) to use the same according to applicable laws and regulations, and (III) to deliver such terminations of easement instruments (in recordable form) as are needed or appropriate at the conclusion of this Agreement's term.

(g) Without notice, Landlord, and its employees, contractors and agents, may enter upon the Premises at any time and for any purpose. If upon Landlord's entry Landlord discovers that Tenant has breached or is in default under this Agreement or the terms, provisions and/or contents of the Construction Documents, then Landlord shall notify Tenant of said breach or default and demand that such breach or default be cured (i) immediately if the breach or default creates an emergency situation, or (ii) within twenty (20) days if no emergency is created. In the event that Tenant fails to cure the breach or default as provided herein, then Landlord may terminate this Agreement and Tenant shall comply with the provisions of Paragraph 9 below.

7. **Taxes.** Tenant shall pay when due all real property taxes, assessments and deferred taxes on the Premises, if any, and all personal property taxes, use taxes and all other charges and fees assessed against the Tenant Facilities, including without limitation possessory interest taxes, business or license taxes or fees, service payments in lieu of such taxes or fees, excises, assessments, bonds, levies and charges of any kind that are assessed, levied, charged, confirmed or imposed by any public authority related to Tenant's occupancy and use of the Premises or any part thereof.

8. **Waiver of Landlord's Lien to Tenant Facilities/No Liens on Leasehold Interest.**

(a) Landlord acknowledges that Tenant has entered into a financing arrangement including promissory notes and financial and security agreements for the financing of the Tenant Facilities (the “**Collateral**”) with a third party financing entity (and may in the future enter into additional financing arrangements with other entities). In connection therewith, Landlord (i) consents to the installation of the Collateral, (ii) disclaims any interest in the Collateral, as fixtures or otherwise, except in the event of Tenant’s default under this Agreement or any of the Project Agreements.

(b) Tenant shall not mortgage, pledge, encumber or in any way allow a lien to be placed against its lease interest in the Premises or in any way transfer or convey its leasehold interest, except as permitted in Paragraph 14 of this Agreement. In the event that (A) the Premises or any part thereof or interest therein shall be mortgaged, pledged, encumbered by any lien interest, leased assigned, or otherwise transferred, or (B) Tenant shall be divested of its interest therein in any manner or way, whether voluntarily or involuntarily, then the same shall constitute a default under this Agreement and Landlord shall have the right, at its option, to (i) immediately terminate this Agreement, (ii) accelerate all payments due hereunder to become immediately due and payable, and/or (iii) exercise all rights and remedies available to it under this Agreement and at law and in equity, such remedies to be cumulative and not exclusive.

9. Termination. Subject to the terms of Paragraph 2 and 6(e) and (g) and the indemnity provided for therein, this Agreement may be terminated without further liability or obligation: (i) by either party upon a default of any covenant or term under this Agreement or the Project Agreements by the other party or the Customer, when such default is not cured within twenty (20) days of receipt of written notice of default, except that this Agreement cannot be terminated if the default cannot reasonably be cured within such period and the defaulting party has promptly and diligently commenced to cure the default within such twenty (20) day period and diligently pursues the cure to completion; provided, however, that the grace period for any monetary default is five (5) days from when such payment is due and there is no grace period for a default which creates an emergency situation or is a default under Paragraph 8(c) above, or (ii) within sixty (60) days from the date of receipt of written notice delivered by Tenant to Landlord if Tenant does not obtain or maintain any license, permit or other

approval necessary for the construction and operation of the Tenant Facilities, or (iii) by Tenant, prior to the expiration of the Due Diligence Period if (a) any environmental report for the Premises reveals the presence of any Hazardous Material (defined below), or (b) if Tenant determines that the Premises is not appropriate for its operations for economic or technological reasons. If the PPA is terminated after the Term Commencement Date, then this Agreement shall terminate sixty (60) days after the PPA termination date in order to provide Tenant with time to remove the Tenant Facilities in accordance with the terms of this Agreement.

In addition to the above rights of termination, upon giving at least 60 days written notice to Tenant, Landlord may terminate this Agreement, in whole or in part, without penalty, when either (i) Landlord determines, in its sole discretion, that the Premises can no longer be safely leased to Tenant because of environmental conditions existing on the Premises or the surrounding the Land, or (ii) the Tenant Facilities are no longer operable (except during any period when upgrading or replacement of the Tenant Facilities is underway).

Upon termination of this Agreement, if directed by Landlord, Tenant shall immediately and completely remove the Tenant Facilities, without damage to the Premises or the Land, and Tenant shall restore the Premises and the Land to substantially the same condition and grading that existed prior to the construction of the Tenant Facilities. If Tenant fails to remove its Tenant Facilities within sixty (60) days after expiration or termination of this Agreement, as the case may be, this shall be deemed, at Landlord's sole election (A) a breach of this Agreement resulting in a springing renewal of this Agreement (upon the Rent rate in effect immediately prior to the termination of this Agreement) on a monthly basis for a period beginning on the sixty-first (61st) day and expiring on the business day following the removal of the final item of the Tenant Facilities, or (B) conclusive evidence that Tenant intends to abandon the Tenant Facilities in which event Landlord may salvage the components thereof for scrap or otherwise dispose of same at its sole election without obligation to compensate Tenant or any lender or lessee of Tenant or the successors or assigns of any such person.

Tenant shall reimburse the Landlord, in the event that Landlord is required to restore/repair the Premises and the Land to substantially the same condition and grading that existed prior to the construction by Tenant

and for any costs associated with the removal and/or storage of the Tenant's abandoned material, including the Tenant Facilities, which reimbursement shall be obtained from the financial assurance furnished as described in Paragraph 13. Landlord shall have exclusive rights to any salvage of abandoned material, including the Tenant Facilities, and the Tenant shall have no right to offset such salvage value against sums Tenant owes to Landlord.

10. Destruction. If the Premises or Tenant Facilities are damaged or destroyed, Tenant may elect to terminate this Agreement as of the date of the damage or destruction by giving notice to Landlord no more than forty-five (45) days following the date of such damage or destruction. Upon such termination and upon Landlord's approval to enter upon the damaged Premises, Tenant shall remove the Tenant Facilities as provided for in Paragraph 9. If Tenant chooses not to terminate this Agreement, Rent will be reduced or abated in proportion to the actual reduction of usability of the Premises for the Permitted Use, and Tenant shall immediately repair and restore the Tenant Facilities at Tenant's sole expense within thirty (30) days of the occurrence of the damage or destruction event(s).

11. Insurance. The Tenant shall purchase and maintain during the term of the Agreement, including any renewals thereof, such policies of insurance acceptable to Landlord as will protect the Tenant and Landlord from claims or losses, regardless of whether such claims or losses result from the Tenant's actions or omissions or those acts or omissions of a subcontractor or those of anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. The following coverages are mandatory but may not be all inclusive, based on the parameters of the Project:

(a) **Workers' Compensation Insurance** with limits of coverage as follows:

1. Coverage A: Statutory, covering [state] jurisdiction.
2. Coverage B: \$100,000.00

(b) **Automobile Liability Insurance** with limits of liability of at least \$1,000,000.00 combined single limit per occurrence. Coverage for non-owned and hired vehicles shall be included. If hazardous materials are transported, insurance shall comply with applicable law relating to such transport.

(c) **Commercial General Liability Insurance** with combined single limits of \$10,000,000.00 per occurrence, naming Landlord as an additional insured. Unless deemed unnecessary by Landlord, the policy shall contain, but not be limited to, the following coverage endorsements:

Contractual Liability, including Subcontractors
Personal and Advertising Injury
Products and Completed Operations
Explosion, Collapse, and Underground Hazards (XCU)

(d) **Contractor's Pollution Liability Insurance** with combined single limits of \$10,000,000.00 per occurrence, naming Landlord as an additional insured. Such coverage may be included under the Commercial General Liability Insurance policy by endorsement if there is no exclusion for sudden and accidental pollution or claims arising out of environmental work.

(e) **Professional Liability/Errors and Omissions** insurance appropriate to the contractor's profession with policy limits of at least \$2,000,000.00 per claim and \$4,000,000 in the aggregate. Tenant shall continue to maintain such insurance, covering incidents occurring or claims made, for a period of three (3) years after substantial completion of the project.

(f) **Property Insurance** with a limit of coverage equal to the total construction cost on a replacement cost basis, and written on an all-risk policy form. Tenant's deductible or self-insured retention may not exceed \$50,000.00 per occurrence and a claim of self-retained retention shall be evidenced by a letter certifying the same from the chief risk-management officer of Tenant, avowing the existence of sufficient funds to address the retention amount.

If any of the insurance policies required to fulfill the requirements of the work are written on a claims-made basis, Tenant shall continue to maintain such insurance, covering incidents occurring or claims made, for a period of three (3) years after substantial completion of the project.

All policies of insurance shall be underwritten by companies licensed to do business in the State of [jurisdiction].

The Tenant shall assure that all subcontractors performing services in accordance with this Agreement carry identical insurance coverage required of the Tenant, either individually or as an Additional Insured on the policies of the Tenant. Exceptions may be made only with the approval of Landlord.

Tenant shall indemnify Landlord for any uninsured losses relating to the contractual services involving subcontractors, including workers' compensation claims.

The Tenant shall not commence work under the Agreement or any contract until evidence of all required coverage is received by Landlord. Further, the Tenant shall continue to provide Landlord with evidence of policy renewals until the termination or expiration of the Agreement and shall not reduce or cancel or change any of the required coverage without 30 days notice of such change to Landlord.

The Tenant will not hold Landlord liable for any injuries to the employees, servants, agents, subcontractors or assignees of the Tenant arising out of or during the course of services relating to this Agreement.

Providing the insurance required herein does not relieve the Tenant of any responsibilities or obligations assumed by the Tenant under this Agreement, which the Tenant may be liable by law or otherwise.

Failure to provide and continue in force such insurance as required above shall be deemed as a material breach of this Agreement and, at Landlord's sole election, shall operate as an immediate termination thereof.

12. Waiver of Subrogation. Subject to the Tenant's covenants of indemnification provided for in this Agreement or in the Project Agreements, Landlord and Tenant release each other and their respective principals, employees, representatives and agents, from claims for damage to any person or to the Land or the Premises or to the Tenant Facilities or any other property thereon caused by, or that result from, risks insured under any of the insurance policies carried by the parties and in force at the time of any such damage. Tenant must cause each insurance policy obtained by Tenant to provide that the insurance company waives all right of recovery by way of subrogation against the Landlord in connection with any damage covered by any policy. Deductibles and self-insured retentions shall not be considered covered amounts under insurance policies.

13. Liability and Indemnity. Tenant shall indemnify, defend and hold Landlord harmless from and against all claims, losses, liabilities, damages, costs, and expenses, including without limitation environmental claims and damages, reasonable attorneys' and consultants' fees, costs and expenses assessed under Environmental Laws, (collectively, "**Losses**") arising from the Tenant's breach of or default under any term or condition of this

Agreement or from the negligence or willful misconduct of Tenant or its agents, employees, licensees, invitees or contractors in or about the Premises and the Land. The duties described in this Paragraph 13 apply as of the Effective Date of this Agreement and survive the termination of this Agreement. To ensure Tenant's performance of its obligations in the final sentence of Paragraph 3 and in Paragraphs 13 and 17, Tenant shall provide and maintain a surety bond or other form(s) of financial assurance approved by Landlord in its reasonable discretion in the amounts specified in *Exhibit D* annexed hereto. If at any time during the Term Landlord reasonably requires further financial assurance due to any change in Tenant's financial or operational circumstances, Tenant shall furnish the amount of additional assurance in a form acceptable to Landlord within thirty (30) days thereafter, unless Tenant provides personal guarantees of the obligations referred to in the preceding sentence from persons with the aggregate net worth equal to or exceeding the estimated sum of the cumulative duties of Tenant contained in those paragraphs.

14. Assignment and Subletting. Tenant may assign this Agreement, or sublet or license the Premises or any portion thereof (collectively, a "*transfer*"), only to (a) the Customer, as identified herein, and (b) as provided in the final sentence of this Paragraph 14. No other transfer of the Premises or any portion thereof is permitted without the prior written consent of Landlord, which may be withheld in the sole, absolute and subjective discretion of the Landlord. Any agreement by the Landlord to a transfer shall be preceded by a written acknowledgement by the proposed transferee that it shall operate the Premises and act under its rights in regard to the Land only for uses identical to the Permitted Use, provided, the transferee shall (i) be permitted to upgrade the technology and equipment with more current technology and/or equipment used in connection with the Permitted Use, so long as such upgrading does not require more than 120 days to accomplish, and (ii) receive an abatement of Rent during that 120 day period only, unless the transferee's capacity reaches an equal or greater level as existing prior to the upgrade (such event called the "**Reboot**") before the 120th day lapses, in which all abatement of Rent shall cease effective on the Reboot date. Tenant may collaterally assign this Agreement to an arms-length, third party lender financing the installation of the Tenant Facilities and, in such event, upon Landlord's receipt of the current contact information for that lender, Landlord agrees to give concurrent written

notice of any default by Tenant to that lender and to accept a timely cure from that lender. Landlord shall sign a reasonable non-disturbance agreement with that lender that does not materially diminish Landlord's rights hereunder and does not increase Landlord's obligations hereunder other than to recognize that lender's right to assume the rights and obligations of Tenant.

15. Warranty of Title and Quiet Enjoyment. Landlord warrants that: (a) Landlord owns the Land in fee simple, has rights of access thereto from the nearest public roadway, which Tenant is legally permitted to use, and the Land and access rights are free and clear of all liens, encumbrances and restrictions except those listed on *Exhibit E* annexed hereto and (b) Landlord covenants and agrees with Tenant that Tenant may peacefully and quietly possess and enjoy the Premises and access thereto across the Land, without interference from Landlord or any person claiming under Landlord; provided, Tenant shall not be in default of this Agreement after notice and expiration of all cure periods.

16. Maintenance and Repairs. Tenant must repair any damage to the Premises or Land caused by the acts or omissions or the negligence or willful misconduct of Tenant. Except as set forth in Paragraph 6(a) above, upon expiration or termination of this Agreement, Tenant must restore the Premises to substantially the condition and grading in which it existed upon start of construction. During the Term, Tenant shall be solely obligated to replace, maintain and repair, as applicable, the Tenant Facilities in order for Tenant's operation of the Premises to remain in compliance with laws and regulations and to remain competitive with the majority of other private solar power generator enterprises operating in [name] County. For a period of not to exceed 90 consecutive days, Tenant shall be entitled to a proportional abatement in Rent under this Agreement if, and only if, more than seventy-five (75) percent of the production capacity is "off-line" while the replacement and maintenance activities contemplated by the preceding sentence are undertaken; provided, however, in no event shall the total number of such days of Rent abatement under this Paragraph 16 exceed 120 days in any one year of the Term or 240 days during the entire Term.

17. Hazardous Material.

(a) As of the Effective Date of this Agreement, Tenant represents and warrants that (i) it shall not use, generate, handle, store, disrupt, remove or dispose of any Hazardous Material in, on, under, upon or affecting the Premises or the Land in violation of any Environmental Law (as defined below), and (ii) it shall comply with all Requirements and Procedures.

(b) Without limiting Paragraph 13, Tenant must indemnify, defend and hold Landlord harmless from and against all Losses including, without limitation, reasonable attorneys', engineers', consultants' and experts' fees, costs and expenses arising from (i) any breach of any representation or warranty made in this Paragraph 17, and/or (ii) environmental conditions or noncompliance with any Environmental Law (as defined below) that result from operations in or about the Premises or Land by Tenant or Tenant's agents, employees, invitees or contractors. The provisions of this Paragraph 17 shall apply as of the Effective Date of this Agreement and survive termination of this Agreement.

(c) **"Hazardous Material"** means any solid, gaseous or liquid wastes, including hazardous wastes,, regulated substances, pollutants or contaminants or terms of similar import, as such terms are defined in any Environmental Law, and shall include, without limitation, any petroleum or petroleum products or by-products, flammable explosives, radioactive materials, asbestos in any form, polychlorinated biphenyls and any other substance or material which constitutes a threat to health, safety, property or the environment or which has been or is in the future determined by any governmental entity to be prohibited, limited or regulated by any Environmental Law.

(d) **"Environmental Law"** means all present or future federal, state or local laws, rules, regulations, codes, ordinances, or by-laws, and any judicial or administrative interpretations thereof, including orders, decrees, judgments, rulings, directives or notices of violation, that create duties, obligations or liabilities with respect to (i) human health, or (ii) environmental pollution, impairment or disruption, including, without limitation, laws governing the existence, use, storage, treatment, discharge, release, containment, transportation, generation, manufacture, refinement, handling, production, disposal, or management of any Hazardous Material, or otherwise regulating or providing for the protection of the environment.

18. Condemnation. Landlord shall receive all the condemnation proceeds awarded that are attributable to the Land value plus the value of the Lease revenue. Tenant shall receive all that portion of the condemnation award allocable to the value of the improvements placed upon the Premises by Tenant; but Tenant shall not seek nor accept any part of the condemnation proceeds for any alleged bonus value of Tenant's leasehold interest.

19. Compliance With Law. Tenant acknowledges and agrees that Tenant has the sole obligation, at its sole cost, to comply with all laws applicable to the Land, the Premises and the Permitted Use for the duration of this Agreement, whether or not Landlord has reclaimed possession of the Land in connection with a default under this Agreement by Tenant. This obligation shall include, without limitation, Tenant's compliance with (i) any modifications of laws, regulations, ordinances or orders that may have been effective on the date this Agreement was made, including those items of governments at the federal, State of [state's name] or [county's name] County levels, and (ii) any changes in private property restrictions to which the Land may be bound as a result of its inclusion within a subdivision or community development district or like special-taxing organization. Tenant further covenants to comply with all conditions imposed in connection with consents and approvals obtained by Tenant from governments, quasi-governmental authorities and private persons.

20. Miscellaneous.

(a) This Agreement constitutes the entire agreement and understanding between the parties, and supersedes all offers, negotiations and other agreements concerning the subject matter contained in this Agreement. Any amendments to this Agreement must be in writing and signed by both parties.

(b) If any provision of this Agreement is invalid or unenforceable with respect to any party, the remainder of this Agreement or the application of such provision to persons other than those as to whom it is held invalid or unenforceable is not affected and each provision of this Agreement is valid and enforceable to the fullest extent permitted by law and, if appropriate, such invalid or unenforceable provision shall be modified or replaced to give effect to the underlying intent of the Parties and to the intended economic benefits of the Parties.

(c) This Agreement is binding on and inures to the benefit of the successors and permitted assignees of the respective parties.

(d) Any notice or demand required to be given under this Agreement is made by certified or registered mail, return receipt requested, or reliable overnight courier to the address of the respective parties set forth below, except where a call notice is expressly permitted under the terms of this Agreement:

Landlord:

Tenant:

Customer:

Landlord or Tenant may from time to time designate any other address for this purpose by written notice to the other party. All notices under this Agreement are deemed received upon actual receipt or refusal to accept delivery.

(e) This Agreement is governed by the laws of the State of [Jurisdiction].

(f) Landlord agrees to sign and deliver to Tenant a Memorandum of Agreement in the form annexed hereto as *Exhibit F* and acknowledges that such Memorandum of Agreement will be recorded by Tenant in the official records of the county where the Land is located.

(g) Landlord agrees to fully cooperate with Tenant, at Tenant's sole cost and expense, including obtaining and/or executing necessary documentation, to clear any outstanding title issues that could adversely affect Tenant's interest in the Premises created by this Agreement.

(h) Each of the parties under this Agreement represent and warrant that they have the right, power, legal capacity and authority to enter into and perform their respective obligations under this Agreement.

(i) Both parties took part in the negotiation of this Agreement and agree that legal concepts intended to construe the Agreement against the drafter will not apply against either party.

(j) In the event of any breach or default by either party, the other party is entitled to all rights and remedies provided for in this Agreement, and/or available at law, in equity, by statute or otherwise, all of which rights and remedies are cumulative and not exclusive. The failure of either party to take action as a result of a breach by the other party shall constitute neither a waiver of the particular breach involved nor a waiver of

either party's right to enforce any provision of this Agreement through any remedy granted by law or this Agreement.

(k) The captions and headings in this Agreement are for convenience only and in no way define, limit or describe the scope or intent of any provision of this Agreement.

(l) All Recitals set forth above, and all Riders and Exhibits annexed hereto, form material parts of this Agreement and are incorporated into this Agreement by this reference.

(m) This Agreement may be signed in duplicate counterparts, each of which is an original.

(n) The parties shall promptly notify each other and the Customer of any matters it is aware of pertaining to any damage to or loss of the use of the Tenant Facilities or that could reasonably be expected to adversely affect the Tenant Facilities.

(o) Neither party shall be considered in default under this Agreement or responsible in tort, contract or other legal theory to the other party for damages of any description for any interruption or failure to perform if such failure is not caused by the affected party's fault or negligence but is caused by factors beyond the party's reasonable control and that by exercise of reasonable diligence the party is unable to prevent or overcome, including without limitation, storm, flood, lightning, earthquake, explosion, civil disturbance, labor dispute, sabotage, war, insurrection, act of God or the public enemy, and action of a court or other public authority. Notwithstanding the foregoing, economic hardship of either Party shall not constitute a Force Majeure under this agreement. **Any obligation to pay an amount owed to the other Party may not be excused by Force Majeure.** If either Party is rendered wholly or partly unable to perform its obligations hereunder because of Force Majeure as defined above, that Party shall be excused from whatever performance is affected by the Force Majeure to the extent so affected, provided that:

A. The non-performing Party, as soon as practicable after the occurrence of Force Majeure, gives the other Party written notice describing the particulars of the occurrence,

B. The suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure, and

C. The non-performing Party uses due diligence to remedy its

inability to perform.

(p) Each Party represents and warrants to the other Party that:

(i) Each person executing this Agreement for that Party represents and warrants that he or she has authority to bind that Party thereby, and

(ii) it has the full power and authority to execute, deliver and perform this Agreement; the execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate or other action by such Party; and this Agreement constitutes that Party’s legal, valid and binding obligation, enforceable against such Party in accordance with its terms, and

(iii) it shall exercise all reasonable care, diligence and good faith in the performance of its duties pursuant to this Agreement, and carry out its duties in accordance with recognized professional standards where applicable.

IN WITNESS WHEREOF, the parties have signed this Agreement, intending to be bound as of the date of the last signature below.

LANDLORD:

TENANT:

Exhibits List:

- Exhibit A: Legal Description of Land
- Exhibit B: Preliminary Legal Description of the Premises and Depictions of Premises, Access Road and Easement Location Boundaries
- Exhibit C: Requirements and Procedures

- Exhibit D: Financial Assurance Parameters
- Exhibit E: Existing Liens and Encumbrances on the Premises
- Exhibit F: Form of Memorandum of Lease Agreement