

Solar Generation: The Development of the Next Real Estate Frontier

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Introduction

During the past several years the business world has developed an increased awareness of and commitment to sustainability. Over the last five years, worldwide companies increased sustainability reports.¹ In North America there was a 27% increase between 2010 and 2011, and 95% of the 250 largest companies worldwide now report their sustainability performance.²

The interest in sustainability is particularly evident in the sector of solar development. The development of solar generation facilities in 2010 doubled over that in 2009, and the installed capacity in 2010 was more than eight times that of 2006.³ Wal-Mart, Costco and Kohl's Department Stores are the top three U.S. retailers employing solar facilities in their leaseholds.⁴ The top 20 companies in the United States are generating an estimated \$47.3 million worth of electricity annually using photovoltaic solar installations. Wal-Mart's goal is to become powered 100% by renewable energy.⁵ Ikea has almost completed implementation of its plan to invest \$723 million in renewable energy at its stores.⁶ Seventy-nine percent of its stores in the United States have solar installations.⁸ Public universities are advancing sustainability as well. Recently, Rutgers University installed an⁷ megawatt carport at one of its campuses, covering 32 acres.⁸

Much of the drive behind the increase in solar development in the United States is a by-product of a perfect storm – high electric energy costs, initiatives at the state and federal levels promoting renewable energy, including use of brownfields and landfills for solar development, and a recognition in the real estate community that there is income to be harvested from the development of solar fields on rooftops, parking lots and unused land.⁹

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This article provides a general overview of some of the state and federal initiatives that have coalesced to spur solar development, examines due diligence issues that should be examined in connection with a solar development project, examines issues that need to be evaluated with respect to the most common project documents used in connection with a solar development project, including engineering, procurement and construction agreements, solar site leases, power purchase agreements, and operation and maintenance agreements, and examines the relationship between the project lender and mortgage lender and the typical agreements entered into to address the relative interests of each. The article focuses on net metered projects, rather than grid connected projects.¹⁰ This article is written primarily from the perspective of the property owner/landlord.

State Legislation and Incentives¹¹

Twenty-nine states and Washington D.C. have renewable portfolio standard (“RPS”) legislation for multiple forms of alternative energy, including solar.¹² An example of such legislation is the New Jersey structure. New Jersey is second behind California for the number of solar installations. The growth of the New Jersey solar market is largely attributable to the State’s enactment of an RPS that, in part, requires a minimum solar component. The solar RPS requires a set percentage (depending on the energy year in question) of kilowatt hours of electricity sold in the State by each electric power supplier and each basic generation service provider to be from solar electric power generators connected to the distribution system in the State.¹³ The legislation requires the percentage of solar power included in the electric power portfolios of New Jersey suppliers and providers to increase incrementally from 2.050% in energy year 2014¹⁴ to 4.100% in energy year 2028. If a supplier or provider fails to meet the stated percentage, then they will have to pay a solar alternative compliance payment. They can, however, avoid such a payment by acquiring Solar Renewable Energy Certificates (“SRECs”). Each solar generation facility earns one SREC for each megawatt hour of solar generated electricity.¹⁵ SRECs are tradable and can be sold like any commodity. Typically, SRECs are owned by the owner of the solar generation system.¹⁶ Similar laws pertaining to the sale of renewable energy certificates or credits exist in a number of other states, including Connecticut, Delaware, Massachusetts, Maryland, Ohio, Pennsylvania and Washington, D. C. In Hawaii, the utility must pay a feed-in tariff for each kWh of electricity generated by the solar generation system.¹⁷

More than half the states authorize solar easements that are designed to protect a solar generation project’s continuing access to sunlight.¹⁸ Solar easement legislation varies among the states from the authorization of voluntary grants such as in New Jersey and Massachusetts, to a requirement for a grant in New Mexico, to an ability to compel a grant by payment of fair value if a voluntary acquisition can not be achieved as in Iowa, to the creation of a nuisance claim under California law if a neighboring tree or shrub shades a project by more than 10%.¹⁹ Other state and local legislation and incentives include²⁰:

- Solar rights legislation designed to limit conditions or restrictions on solar installations;
- Expedited permitting processes for solar installations;

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- Legislation governing permitting fees that can be assessed by local authorities with respect to solar installations;
- Local governments that have established detailed guides outlining the technical requirements, general permit requirements, interconnection process and general checklist of “To Do” items for a solar installation, such as Scottsdale, Arizona, San Diego and San Jose, California, Boston, Massachusetts, Portland, Oregon and Philadelphia, Pennsylvania;
- Grant programs, such as in New York;
- Income tax credits, such as in Maryland and North Carolina;
- Property tax exemptions, as in California, Massachusetts, New Jersey and New York;
- Sales tax exemptions, as in Massachusetts, Maryland and New Jersey; and
- Streamlined regulatory processes and enhanced renewable energy certificates for projects constructed on brownfields and landfills, such as in New Jersey.²¹

Federal Initiatives

The Federal Energy Regulatory Commission (“FERC”) has jurisdiction over the interstate sale of electricity. Net metered projects that do not involve the sale of electricity to a utility are not subject to the regulatory requirements of FERC. FERC also provides for a reduced regulatory oversight of “Qualifying Facilities” as defined by the Public Utilities Regulatory Policy Act of 1978.²² FERC provides for special regulatory treatment of solar facilities that are 80 megawatts or less and allows for such facilities to “self-certify” such status. In addition, FERC exempts from the self-certification process those projects that are 1 megawatt or less.²³

The most significant initiatives at the federal level are the 30% investment tax credit for solar projects put in service on or before December 31, 2016, the 30% cash grant (now expired, but available for those that met the safe harbor before January 1, 2012) and the ability of solar generation facilities to accelerate depreciation of eligible solar renewable energy equipment over a 5 year period.²⁴

Due Diligence Issues

The evaluation of whether to install a solar generation system involves an examination of a number of issues including, (a) the economics of the transaction, (b) the system details concerning type and location and the resulting concerns, (c) permitting issues, (d) utility issues, (e) warranty issues, (f) selection/approval of the system installer, and (g) continuing operation and maintenance of the system. The due diligence examination should begin with a review of the lease agreement, if the property is not owner occupied. How does the lease address billing for electricity? Is the electric meter in the name of the property owner/landlord or the tenant? Is the lease a gross lease or a net lease? Can lease modifications, if required, be effected so that the property owner/landlord does not incur the capital cost of a solar generation system without the benefit of a lease structure that enables the sale of the electricity to the tenant? Does the property owner/landlord have control of the roof or other areas of the property at which

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the solar generation system components will be located, including access to the roof and any interior space necessary for related wiring? Regardless of whether the property owner plans to develop and own the solar generation system or provide space on its property for a third party to develop the system, due diligence will be necessary.

Transaction Economics

Transaction economics require close scrutiny in order to make the threshold determination whether to develop and own the solar generation system or enter into a Power Purchase Agreement in which a third party will develop and own the solar generation system and power will be purchased at a reduced rate. In this instance, the following issues need examination:

- What will the system cost, including approval costs, permitting fees, design and engineering fees, and installation costs? Will the installation require (a) upgrades to the building electric distribution system, (b) repaving of the parking lot (if a parking canopy system is under consideration), (c) a new roof (if a rooftop system is under consideration) or (d) grading/geotechnical work (if a ground-mount system is under consideration)? If an engineering analysis is undertaken, will the report be issued to the property owner or will a reliance agreement be provided to the property owner in order that the property owner has privity with the engineer and can rely on the report?
- What funds may be necessary to construct the project and are those funds available and at what cost?
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 - Equity.
 - Equity based on a cash return.
 - Equity based on a tax benefit return.
 - Construction financing.
 - Permanent financing.
 - Financing based on project revenues/assets.
 - Financing based on corporate entity/personal guaranty.
 - What is the expected energy savings based on anticipated production and current and anticipated increased electricity cost over the life of the system? It is very important not to overestimate anticipated energy production or use unreasonable escalations for electricity costs. Utility rates vary from state to state, and may also vary throughout the year depending on rate variations due to summer peak demand. Production will be a factor in determining electric energy cost savings. In those states where there is a state renewable energy certificate or credit initiative, or there are other environmental attributes available to be monetized and that are production based, production will directly factor into the number of energy certificates or credits that may be generated or the dollar value of other environmental attributes. Production may also factor into the dollar value of certain grant programs.

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- What state and federal incentives are available, including grants, tax credits, rebates, and accelerated depreciation? In evaluating incentive programs, it is necessary to determine whether the benefits are guaranteed or are limited and only available on a first come first serve basis (and if the latter, the reasonable likelihood of an award). Also, examine any expiration dates for such programs and the likelihood of project completion before the expiration date or satisfaction of any safe harbor requirements.
- Are there any other environmental attributes, in addition to the state and federal incentives that may be monetized? If so, determine the lifespan of such attributes.
- Account for the taxability of incentives and other environmental attributes.
- What impact will the solar system installation have on property taxes?
- What additional insurance can/should be obtained with respect to the solar system and at what cost? A number of insurance carriers offer insurance policies that include business interruption coverage extending to lost energy sales, lost renewable energy certificates or credits, the tax value of depreciation and the claw-back or loss of the federal grant or investment tax credit in the event of a system loss due to a fire or other insured casualty.²⁶
- Are there any energy efficiency measures that can be put in place in advance of the solar system installation that will reduce the building energy demand and system size requirements, and at what net cost savings? This must include an evaluation of available energy efficiency upgrade incentives.
- What regulatory requirements may add cost to the project, such as required utility system upgrades, or prevailing wage requirements?

System Details

It is necessary to evaluate the types of solar systems that are available for installation at the particular site, the available location of such an installation, the related potential consequences of each alternative and the annual degradation of each type of system. There are 3 types of solar systems that can be installed at a site-rooftop, ground-mount and parking canopy. In determining which type of system to select, there needs to be an evaluation of the potential size of the system depending on the type. The answer will impact roof space, land space or parking space needed and the resulting energy output and payback. For each type of system, it is necessary to evaluate the site and neighboring properties to determine whether there are any shading issues that cannot be overcome, or may need to be protected against by way of a solar easement (assuming there is a statutory basis for such in the jurisdiction in question).

Rooftop system:

A rooftop system requires an engineering analysis of the roof and building structure and roof condition to determine whether any engineering will be required to ensure structural integrity. Because the roof will be covered with panels, roof maintenance and repair become problematic. Most often a new roof will be installed in connection with the solar system installation. The cost of a new roof also must be accounted for in the economic evaluation of the installation. If a fairly new roof exists then it will not be necessary to

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install a new roof; however, there must be an investigation of the measures required by the roof material manufacturer to ensure the continued validity of the existing roof warranty. This may also be required in connection with a new roof installation. The following additional issues should be examined in connection with a rooftop system installation:

- What mounting system will be used to secure the solar system to the roof, and will it cause any roof penetrations?
- What padding will be used in connection with the mounting system to protect the roof surface and will that satisfy the roof warranty?
- What wire management system will be used in connection with the solar system installation to reduce the number of roof penetrations or can roof penetrations be avoided altogether?
- What protective measures will be employed during installation to ensure the continued integrity of the roof, such as padded “walkways”?
- What is the wind tolerance level for the solar installation?
- Are there any regulatory constraints to the solar system installation, such as historic district limitations or zoning set back requirements relative to roof installation?

Ground-mount system:

A ground-mount system requires an examination of a number of issues, including:

- Are there any legislative limitations, such as system size or location?
- Are there any limitations on construction due to topography, geotechnical conditions or shading?
- If there is a shading issue, are there local restrictions on tree and shrub removal?
- Examine potential future development of both the site and surrounding sites for potential shading issues. Depending on the results of the examination, determine the availability of and likelihood of securing a solar easement.
- Are there zoning limitations impacting a ground-mount system? For example, will the installation violate any set back requirements, impervious surface coverage limitations, or steep slope construction limitations? What landscaping requirements may be imposed and what will the impact be relative to cost, production and shading.
- Are there any environmental limitations or impacts, such as wetlands, protected species or hazardous substances? It is important to undertake a site inspection consistent with federal and state innocent purchaser requirements in order to secure innocent purchaser defense protection.
- Are there any title restrictions in terms of easements running through the affected area or mineral rights?
- What security risks are present and what will be the cost to install the requisite protective measures?

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Parking canopy system:

In addition to the issues above, a parking canopy system requires an examination of the following issues:

- Is the system designed so that there are leaders and gutters to avoid dripping and icing in the winter time?
- Is the system designed so that there are no gaps between modules, or if there are, that any potential for dripping is addressed so that icing is avoided?
- Are there any environmental restrictions, such as the parking lot being utilized as a cap over contamination, that may impact the project?
- What lighting will be provided to the parking lot generally and under the canopies in particular?

Approval/Permitting Requirements

It is important to determine who will apply for and have responsibility for securing approvals and permits - the installation contractor or the system owner.

Regardless of where responsibility rests, it is important to identify state and local requirements for system development, including requirements for net metering registration, registration to sell solar renewable energy certificates or credits, and requirements for other available environmental attributes. Further, state and local approval and permitting requirements need to be evaluated to determine the process, timing and any sequencing requirements. For example, in New Jersey, in order to secure an interconnection agreement with the local electric distribution company, upgrades to the utility distribution system must be paid for by the applicant. Also, in New Jersey certain registration requirements must be met relative to SREC registration prior to commencement of construction and construction must be completed within a specified period following registration. It is also important to evaluate the local zoning requirements. In addition to zoning issues discussed above under System Details, determine whether zoning approval requires a public hearing and if so, evaluate the timing and likely public reception in order to plan for potential resistance.

Warranties and Guaranties

In evaluating the issue of warranties and guaranties, review the following:

- Will the installation contractor provide a completion guaranty?
- Will the installation contractor provide a production warranty?
- Will the installation contractor provide a warranty of workmanship and materials (other than materials for which a manufacturer's warranty will be delivered)?
- What warranty will be provided by the manufacturer relative to the panels, inverter, and mounting structure? Are any extended warranties available?

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- Are there any conditions to a warranty claim, such as (a) a requirement for the contractor installer to have been a manufacturer “approved” installer or (b) a requirement that the original purchase order or sales receipt be presented before a claim can be processed?
- Where and how can a claim be made on a warranty?
- Will the installation contractor assist in the prosecution of a warranty claim?
- What is the creditworthiness of the manufacturer and installation contractor?
- Is there an insurance policy that backs up the warranty? For example, Solyndra had an insurance policy to provide limited protection under its warranties triggered by its bankruptcy.
 - What warranty is provided concerning the annual degradation of the solar panels?

Contract Installer Information

Issues to examine in connection with the contract installer include:

- How long has the contract installer company been in existence?
- What is the financial status of the contract installer?
- Has the contract installer provided references and what do they report?
- Are there local projects performed by the contract installer that can be inspected?
- Is the contract installer an “approved” contractor by the issuer of related warranties (if such a requirement exists)?
- Is the contract installer licensed (if required under state law) and bondable?
- What experience does the contract installer have with similar size/type solar installations in the project jurisdiction?
- What experience does the contract installer have with applying for and securing available incentives in the project jurisdiction and at the federal level?
- If there are environmental attributes available from system production, will the contract installer help monetize and monitor them and at what cost?

Operation and Maintenance

Issues to examine in connection with system operation and maintenance include:

- Who will maintain the system and at what annual cost?
- What will a regular maintenance contract include by way of performance?
- Will additional investment (replacement of panels or other equipment) be required to maintain the system output during the life of the system and how much and when will such capital expenditure be required?

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- How is the system functionality determined and how is the system's degradation curve verified?
- How will the system be monitored to ensure against damage by third parties?
- Will a monitoring system be installed in connection with the system installation to monitor system production and will the maintenance contractor remotely monitor to detect production/equipment issues?

Project Documents – Engineering, Procurement and Construction Agreement

In a first party ownership structure, the property owner or operator builds and owns the system (usually through an affiliate). In such a transaction, the solar system owner enjoys a number of benefits, including (a) free electricity (the benefit of which will turn on demand and electricity pricing in the jurisdiction), (b) ownership of all environmental attributes, such as renewable energy certificates or credits or feed-in tariffs, (c) the federal tax credit or (depending on the date that work on the project commenced) the federal cash grant, and (d) depreciation benefits. With these benefits comes certain "detriments" including (a) up front capital cost of construction, (b) on-going operation and maintenance responsibility, (c) added insurance costs to cover the system and production down time resulting from a fire or other insured casualty, and (d) jurisdiction depending, added real estate taxes.

In a first party ownership structure, the property owner or operator (usually through an affiliate) enters into an engineering, procurement and construction agreement ("EPC Agreement" or "Solar System Installation Agreement") with a contract installer. It is necessary to have an understanding of the project jurisdiction's laws in order to ensure that the EPC Agreement properly addresses requirements for interconnection, net metering and, if applicable, renewable energy certificate or credit requirements, as well as any other jurisdictional requirements pertaining to the solar project and related environmental attributes. For example, in New Jersey the system must include a minimum of a 5 year warranty for solar renewable energy certificate approval. In addition, depending on the project size, prevailing wage requirements must be satisfied. Among the many issues to be evaluated and addressed are the following:

Definitions

A close examination of the definitions is essential. As used below, "System Owner" refers to the property owner or operator that will own the solar system and contract for its development and "System" refers to the solar generation system to be constructed.

- **Equipment.** Equipment should be described generally and specifically. An example is as follows: "Equipment" means all equipment, meters, inverters, PV panels, monitoring system, racking and support system, apparatus, machinery, parts, start-up spares, components, appliances, System Owner utility interconnection equipment from the System to the point of common coupling, materials, supplies and appurtenances thereto which are (a) required for assembly, construction, installation, interconnection, start-up, testing, completion and/or operation of the System in accordance with the terms and conditions of this Agreement and/or (b) described in or required to complete all work under this Agreement, including, without limitation, the equipment set forth in the attached Exhibit X.

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- **Final Completion.** Before the final payment is made to the contract installer there must be final completion. The following issues must be addressed in connection with final completion: (a) completion of all work outlined in the agreement, (b) successful commissioning of the system, (c) delivery of as-built drawings stamped by a licensed professional engineer, and all system/equipment manuals, (d) successful completion of all inspections, including (to the extent required by the jurisdiction) the local utility regulatory authority, the local utility and the local governmental authority, (e) assignment of all subcontractor warranties, (f) delivery of original supplier warranties and any related sales receipts or purchase orders that may be required in connection with a claim under the warranty, (g) good title to the system, (h) final lien waivers from the contract installer, all subcontractors and suppliers, and (i) application for and (depending) receipt of relevant federal and/or state incentives. The contract installer should be required to provide the property owner/operator with advance notice of any commissioning so that the property owner/operator can arrange to be present along with its own professional representative to observe the commissioning event. The EPC

Agreement should include a project schedule that addresses the timeframe for final completion, and the consequences if final completion is not achieved by a date certain, particularly if that results in a loss of critical project funding/incentives.

- **Force Majeure.** It is important that a force majeure provision not include (a) that which is within the reasonable control of the contract installer, (b) that which with the exercise of due diligence could be or could be caused to be prevented, avoided or removed, (c) that which is the result of a party's negligence, recklessness or intentional misconduct, (d) that which is the result of a party's failure to perform under the agreement, (e) strikes or labor disputes that involve the employees of the contract installer, (f) weather conditions unless such conditions are material, adverse and not reasonably anticipated in the geographic area of the project, or (g) an inability to make payments due to economic downturns in the economy or a failure to have insurance.
- **Government Approvals.** Sometimes efforts are made to limit approvals to those required prior to final completion or to carve out local zoning and planning approvals. Because the contract installer will be providing a warranty for at least 5 years with respect to materials and workmanship, it is inappropriate to limit government approvals to those required prior to final completion – work may be required after final completion. In addition, if the EPC Agreement is a turn-key agreement, then the limitation on responsibility for local zoning and planning approval is also inappropriate.
- **System.** The definition of System should include a reference to the DC watt size (or nameplate capacity) of the system and the amount of MWh or AC electricity the system is capable of generating under optimum conditions in the first year after Final Completion.
- **Work.** The definition of the work to be performed should be very broad, such as "all acts required for the design, procurement, engineering, assembly, construction, installation, start-up, performance and completion of commissioning tests (in accordance with the Agreement), and completion of the System as more fully described in the Statement of Work, including, without limitation, all services, supervision, testing, labor, machinery, materials, supplies, Equipment, and connection of the System

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with the building electrical system and the System Owner utility with respect to net metering and interconnection.” The Statement of Work should include a very detailed delineation of the project work.

Pricing, Payment and Change Orders

The EPC Agreement should clearly state the project cost. Pricing is usually based on a per watt basis. Because the final system size may not be known when the EPC Agreement is entered into (because engineering and final plans and specs are required) it is important that the system have a maximum and minimum size. The system should not be so small that the cost/effort is no longer worth while and not so large that the cost is greater than what the property owner/operator can afford. It is also important to provide that the stated cost includes obtaining an interconnection agreement with the local utility and any related studies and system upgrades.

Payment should be conditioned on specific milestones of construction and equipment delivery. Before payment of any significant amount is made it is important to make sure that the following have been secured: (a) a building permit; (b) an electrical permit; (c) net metering approval; (d) an interconnection agreement with the local utility; (e) a zoning permit, if required; (f) registration for renewable energy certificates or credits, if required. It is also important to coordinate payments with any applicable draw timeframes under any construction financing. If a payment amount is disputed, provide for a right to withhold or escrow the disputed amount and that the contract installer will continue performance notwithstanding the disputed payment.

Beware of provisions that make change orders automatic if there is (a) a force majeure, (b) a change in law or (c) a breach by the property owner/operator of the agreement. If a change order for a force majeure is agreed upon, make sure that the situation is limited to an uninsured force majeure. If a change order is allowed due to a change in law, make sure that the change in law is not that which a contractor could or should have anticipated, such as any change resulting from pending legislation or proposed regulations. If a change order is allowed due to a breach by the property owner/operator, make sure that it is of a material nature, results in an adverse financial impact that was not reasonably avoidable by the contract installer and only follows a cure period.

The agreement should clearly state that changes in “Work” are only permitted by way of a written change order. Any change order issued should include (a) the details of the factors necessitating the change, (b) the impact on the contract price, and (c) the impact on the project schedule. The property owner/operator will want approval rights for any change order; however, the contract installer may want an absolute right in the event of concealed or unknown conditions at the project site. Unknown conditions should be limited to latent conditions.

A property owner/operator should reserve the right to make changes so long as they do not adversely affect (a) energy output, (b) the validity of any warranties, (c) the contract installer’s warranty or (d) site conditions.

Scope of Work

The body of the EPC Agreement should require the contract installer to furnish all Work (a) in accordance with the terms of the agreement, (b) pursuant to the Statement of Work, (c) in accordance with good industry practice and (d) necessary to complete the System and achieve Final Completion. On rooftop projects, the EPC Agreement should address the responsibility of the contract installer relative to the existing roof warranty. Many roof manufacturers today have a protocol in place to approve an installation and confirm in writing the continuation of the roof warranty. The obligation to satisfy the roof manufacturer requirements should rest with the contract installer.

Contractor Responsibility

In addition to completing all Work and achieving Final Completion, the contract installer responsibility should include the following:

- An acknowledgement that the contract installer has inspected the site and confirms it is suitable for the installation, operation and maintenance of the System. The contract installer should assume the risk of any site conditions affecting the Work.
- An agreement upon the lay-down and staging areas and an acknowledgement that they are adequate.
- A firm outside date for commencement and completion that trumps force majeure because, depending on the jurisdiction or federal incentives sought, timing can have significant financial consequences.
- Arrangement for the delivery of all Equipment to the project site and inspection of the Equipment when delivered so that the contract installer cannot later argue that damage, if any, occurred during transit.
- To the extent required in connection with any third party warranties, that the contract installer and all personnel on the project are licensed and "approved" by the manufacturer.
- The obligation to abide by certain access requirements, including (a) that access will not interfere with use and occupancy of tenants, guests or invitees, (b) that access will be coordinated with the property owner/operator, (c) that site security measures will be followed, (d) that the site will be cleaned daily, and (e) that the work will be performed in accordance with the requirements of all applicable laws and applicable approvals required for the project.
- That the contract installer (and if applicable its subcontractors and suppliers) will keep all books and records pertaining to the project for the period required in order to comply with any audit rights of the federal or state governments relative to any financial incentives secured for the project.
- The obligation to secure general liability insurance, automobile liability insurance, professional liability insurance, workers compensation insurance (including employer's liability insurance) and builder's risk coverage. The builder's risk should provide that the property owner/operator is covered and the loss payee should cover loss while in transit so that Equipment damaged during transit is covered. The insurance coverage should also include such soft costs as professional fees for

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architects, surveyors, engineers, counsel and accountants, government fees and permits and coverage for property of others in the contract installer's care, custody or control. The insurance provisions also should address deductibles, co-insurance, self-insurance, waivers of subrogation (in favor of the property owner, its tenants and lenders - both mortgage lender and system lender), and additional insured requirements.

- The obligation to require subcontractors and suppliers to procure insurance pursuant to the terms of the EPC Agreement.
- The obligation to deliver interim and final lien waivers.

Title and Risk of Loss

Usually, title passes to the property owner/operator on the earlier of payment or delivery of the equipment to the project site. The property owner/operator will, however, want the contract installer to retain the risk of loss until final completion. Consequently, the structure of the builder's risk coverage outlined above under "Contractor Responsibility" is particularly important.

Default and Remedies

When drafting the default provisions of the EPC Agreement, make sure the cure period cannot result in a loss of environmental attributes or any governmental incentives. Also, beware of provisions that entitle the contract installer to the value of any work performed and not paid for even in the event of contract installer default. If the net damages suffered by the property owner/operator are less than the value of unpaid work then perhaps the contract installer should have a claim, but similarly if the property owner/operator defaults and the value of the work paid for exceeds the net damages suffered by the contract installer, then the property owner/operator should have a claim for reimbursement.

Typically, an EPC Agreement will exclude consequential damage claims. There should, however, be a carve out for (a) claims of third parties subject to indemnity under the EPC Agreement, (b) a breach of a confidentiality provision, (c) claims covered by insurance to the full extent of the insurance coverage required under the EPC Agreement, (d) damages due to a loss of a manufacturer's warranty arising from the contract installer's default, and (e) loss of environmental incentives and projected energy savings.

EPC Agreements also frequently limit the liability of the contract installer to the payments required under the EPC Agreement. Such a provision should be revised to include the consequential damage carve-outs and actual damages incurred to complete the project, including (a) removal, replacement and installation of equipment, (b) cost to correct deficiencies to ensure performance of the system and/or issuance, validity and/or continuation of warranties, and (c) any additional cost for manufacturer warranties or replacement contractor warranties.

Warranty

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Generally, the System Owner wants to know: (a) that the solar system is warranted to have been designed, engineered, constructed and installed in a good and workmanlike manner, consistent with good industry practice, using new materials, (b) that the work was performed in conformance with the requirements of the agreement, the plans and specifications and all warranties, (c) that the work will be free of defects in design, engineering, material and workmanship for the warranty period, and (d) that the equipment, other than that for which there is an independent third party warranty, is in conformance with the requirements of the EPC Agreement, and is free from defects in its design, engineering, materials and workmanship for the warranty period.

There is no bright line with respect to system output. This is a frequent topic of hot debate, as the contract installer will argue that responsibility for any deficiency should rest with the panel manufacturer.

When reviewing the contractor installer warranty, be careful to review the concept of “defect.” Frequently, defect, as defined, will be limited to inferior workmanship rather than inferior design, engineering, materials and workmanship.

Be careful that a failure to give notice of a defect within a set timeframe does not negate the contract installer warranty. Failure to give timely notice should not terminate the warranty unless the contract installer can show material prejudice. In addition, the warranty period should not commence until Final Completion and should be extended for a period equal to the period of non-conformance. If any repair or replacement is effected under the warranty, the access should be governed by the same access terms as the initial construction, and the work should be warranted for the longer of the remaining warranty period or 12 months.

The EPC Agreement also should obligate the contract installer to assist in any third party warranty claim. In addition, if that claim is rejected due to faulty workmanship or unauthorized personnel performing the installation, the contract installer should be obligated to remedy the defect consistent with the terms of the third party warranty, and the obligation should have the same duration as the third party warranty.

Finally, if the contract installer is undertaking the on-going operation and maintenance of the system, then the contract installer should bear the risk of any failure to maintain in accordance with the prerequisites of any third party warranty.

Project Documents – Site Lease

In a third party ownership structure, a third party owns the system. Depending on whether the meter is in the name of the property owner or building operator(s), that party (the “Off-Taker”) will purchase the power from the system owner or power provider (the “Provider”) via a power purchase agreement. When the Off-Taker is a party separate from the building owner, the building owner (the “Host”) will enter into a site lease with the Provider granting the Provider the necessary right of entry to construct, operate and maintain the solar generation system on site. If the Host and the Off-Taker are one and the same, then the relevant terms of the site lease can be addressed in the power purchase agreement.

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In a third party system ownership, the Provider builds and owns the system and enjoys the benefits, including (a) the proceeds from the sale of the electricity (which presumably will be sold to the Off-Taker at a rate less than the rate of the local utility company or the project would not be approved by the Host and Off-Taker), (b) ownership of all environmental attributes, such as renewable energy certificates or credits or feed-in tariffs, (c) the federal tax credit or (depending on the date that work on the project commenced) the federal cash grant, and (d) depreciation benefits. The Host avoids responsibility of ownership, including (a) up front capital cost of construction, (b) on-going operation and maintenance responsibility, and (c) added insurance costs to cover the system and production down-time resulting from a fire or other insured casualty. The benefit for the Host of this structure is that it can entice tenants to its building by having available less expensive electricity while at the same time, depending on the structure, receiving a roof rent or a new roof, or some combination thereof. This structure is one available structure for a Host that cannot take advantage of the federal investment tax credit because it is a not-for-profit entity or a non-taxpaying entity.

In a third party ownership structure, the Provider selects the contract installer and enters into the EPC Agreement; however, it is not uncommon that the contract installer first establishes a relationship with the Host, and actually secures the site and then brings the deal to a pool of investors that it works with to move the deal forward. This structure has increased in popularity, particularly with the demise of the federal cash grant.²⁷

The determination to construct and own versus a third party ownership structure turns on a number of factors, including, whether the property owner is a taxpaying entity with a tax credit appetite, and the balance between the interest in energy efficiency versus the cost, after accounting for rate of return and factoring in available federal and state incentives and the local cost of electricity. When the scale tips in favor of third party ownership, then the balancing shifts to the interest of the Provider in access to the building for construction, operation and maintenance purposes, the ability of the Provider to finance the project, the requirement for a purchaser of all of the generated power and the ability to maximize the monetization of all available environmental attributes. That interest must in turn be balanced against the Host's interest in preserving the financability of its real estate, the desire to only grant rights to the Provider that are necessary for it to satisfy its interests without any greater real estate interest, the continuing ability to access its roof (in the case of a rooftop project) and undertake any required roof maintenance without added cost, the ability to efficiently and effectively operate its primary business – real estate leasing, and the ability to offer its tenants less expensive electric power.

When structuring a site lease for a solar project, all of the traditional real estate leasing issues are as relevant to a site lease for a solar project as they are to any other tenancy. In addition, make sure that the mortgage lender agrees with the concept of a solar project and site lease as well as the related inter-creditor arrangements required for a solar project, which is discussed below in the section titled "Relationship Between Property Owner, System Owner, Mortgage Lender and System Lender."

Published Articles (Cont.)

Below is a general outline of some of the more significant issues to address in a site lease from the perspective of the Host.

Premises

It is not uncommon to see a mix of grants within the premises conveyance section of a site lease. Some of the more onerous provisions that should be addressed, include:

- The grant of an exclusive easement over those sections of the property useful for locating solar generation facilities.
- Provisions granting a right to relocate the solar generation system anywhere on the roof.
- Provisions permitting the installation of any other equipment the Provider determines in the future.

The foregoing grants are not only overly broad, but they are not necessary to the Provider's interest in securing the site to develop, finance and operate the agreed upon solar generation system, and are detrimental to the on-going business interest of the Host to retain use of its roof, access to its mechanical systems, and be able to lease and finance its real estate.

If the project involves a rooftop system, then the leased premises should be limited to the area of the roof over which the system will be installed and the area for the system inverter. The use of common facilities, such as means of ingress and egress to the roof, building risers, and building electric room, can be addressed by way of a grant of the right to use such common areas in common with others.

In addition, it is important to provide for a lay-down area for construction staging in order to ensure that the on-going day to day activities of tenants and their invitees are not disturbed.

Use

It is not uncommon to see a Use Clause that grants the Provider the right to use the premises (a) for any lawful use or (b) for solar energy conversion, collection and transmission of power or any other similar purpose or activity. The use clause should be specific. In a solar site lease, the document should clearly limit the use to the construction and operation of a solar electric system of a stated size, for the purpose of collecting and transmitting power to the building on the property.

Most site leases include a right of the tenant to conduct testing and an investigation to determine the feasibility of the construction of a solar generation system. The tenant has a legitimate interest in undertaking an investigation and evaluation of solar radiation, meteorological and geotechnical data (the latter where a ground-mount system is intended) and other studies to evaluate and determine the feasibility of the project from a technological and financial perspective. But, make sure that the right does not extend to a wholesale environmental investigation. While a Host may have an interest in reduced energy costs, it has no interest in the discovery of previously unknown contamination.

Published Articles (Cont.)

Usually within the use clause (or elsewhere within the site lease) there will be a provision granting the tenant a broad construction right. For example, the following is language from a solar site lease reviewed by the author:

Tenant shall have the right to construct, install, improve, replace, relocate within the Property, and remove from time to time, and maintain, use, monitor and operate existing, additional, or new solar energy collection cells, panels, mirrors, lenses and related facilities and future technologies, all for the generation of electricity from sunlight.

The provision “relocate within the Property” arguably expands the tenant’s rights to areas beyond the Premises. Similarly, the right to install “additional” equipment gives the tenant the right to expand the size of the system. The right to install “future technologies” leaves open a host of issues, including questions concerning size, safety, efficiency, building impact, noise, and sightliness. With any supplemental installations, the same standards that governed the initial installation must also govern any subsequent installation.

Some additional “hot button” provisions to watch for include:

- A right to construct meteorological towers. The Host/landlord should have a consent right based on size, height and weight.
- A right to install fences, gates and signage. The Host/landlord will want to approve all signage for development consistency, and approve any fences or gates for aesthetics and will not want fences or gates to prevent access to the roof.
- A right to include, as a part of the construction operation, fasteners and other equipment associated with the installation of the solar generation system. It is important that the Host/landlord understand just how the panels will be “adhered” to the roof. The goal is to avoid any roof piercing, or at the least to minimize any piercing to an absolute minimum. Consequently, the site lease should not grant an open-ended right to install fasteners, or other equipment.
- A right to install “other improvements and fixtures.” A major concern from a financing standpoint of both the Host and the Provider is that the solar electric system not become a fixture. Consequently, any language that remotely might yield such a determination should be stricken.
- A right to 24/7 access. This provision may or may not be problematic depending on the particular site and nature of operations conducted by the Host/landlord’s primary tenants. To the extent that the site has security provisions, the site lease will have to address site security requirements.

Use provisions will also frequently include provisions granting to the tenant an easement to (a) use the building equipment room and building risers and raceways, (b) access, ingress to and egress from, and over the building and property and the right to use any utility, transmission and other easement and right of way held by the Host/landlord, and (c) conduct tests and inspections on and over the building and property as the tenant deems useful. It is incongruous to express the foregoing grants in terms of an easement. To the extent any of the foregoing rights are provided, they should be granted by way of a

Published Articles (Cont.)

limited (scope and duration) right, to be exercised (at least in terms of items (a) and (b) above) in common with other occupants of the property.

Use provisions also frequently include an exclusive right of the tenant to all solar resources at the property and the exclusive right to conduct all solar operations on the property. In addition, the clause typically provides that the Host/landlord will not interfere with or construct or permit construction of any structure that will block or impair the solar resources at the property. The exclusive use provision can come into play in a number of settings, depending on the precise language of the site lease. Does the tenant have an obligation to build in the first instance? If the Host/landlord constructs a building addition or acquires adjoining property will the tenant control solar development in those settings? If so, if the tenant does not construct a solar system, will the Host/landlord then have the right to lease to a third party to develop a system? If the solar generation system is a ground-mount system, will the tenant have the responsibility to bring the power to the new building addition? All of these questions must be addressed if the tenant receives an exclusivity right.

Regardless whether the tenant is granted exclusivity, it is important to make sure that tenant has an obligation to continuously operate. The true value of these projects to a Host/landlord is less expensive electricity. Consequently, if the tenant does not continue to operate, the Host/landlord should have the right to secure a new system and new operator.

Term

Many site leases break down the term to a “pre-operating period” that commences on signing and continues until the solar generation system is constructed and operational. At that time the basic lease term will commence and will usually run for a 15 to 25 year term. It is important that the pre-operating period have a finite term. If within that term (usually 6 to 12 months) the solar generation system is not constructed and operational then the site lease should terminate.

It is also not uncommon to review a site lease that grants a tenant the unilateral right to terminate at any time. That right should not extend beyond the pre-operating period, should terminate upon a tenant default and should tie in with the power purchase agreement so that if one agreement terminates, the other does as well.

Payment

Payment under the site lease varies widely depending on whether the Host/landlord receives a new roof as a part of the deal and whether the primary purpose is less expensive electricity for the building without regard for a rental income under the site lease. Payments under the site lease should be characterized as rent. Rent may be determined in any number of ways, including on a per square foot basis or the number of kWh of electricity sold from the system. If the rent calculation is based on the kWh sold from the system, then it is important that the parties determine how they will address a casualty event that affects only the system.

Solar Generation System

The solar generation system installation provisions of the site lease require careful review and should provide the following:

- Engineering - prior to installation, the tenant should obtain a report covering the structural integrity of the building and the roof structure. The report should be made available to the Host/landlord and should either run in favor of the Host/landlord or a reliance letter should be given to the Host/landlord so that it has privity with the engineer. The report should address, among other items, the ability of the building and roof to bear the weight of the system, including when combined with snow loads and accounting for local prevailing winds. Unless a positive report is obtained, the site lease should terminate. If the project involves a ground-mount or parking canopy, evaluate grading issues and resulting site impact, tree and shrub clearing requirements and local ordinance restrictions and soil erosion issues. If the project involves a rooftop system, the tenant must deliver to the Host/landlord a written confirmation from the roof manufacturer of the continuation of the roof warranty.
- Construction period - the site lease should establish a construction period that includes construction, commissioning, interconnection with the public utility system and actual energy production. If the system construction is not completed within a predetermined period, the site lease should terminate.
- Insurance – the tenant’s insurance should include all-risk Builder’s Risk (special covered cause of loss form, including installation floater covering equipment to be installed) insurance that continues until the system is fully constructed, installed, commissioned, interconnected with the public utility system and producing electricity. In addition, the site lease should address the subcontractors’ insurance requirements.
- Permits and approvals - prior to commencing construction, the tenant must have secured and delivered to the Host/landlord all governmental and quasi- governmental permits, certificates and approvals for the construction, installation, commissioning, interconnection of the system with the public utility system and production of electricity.
- Plans and specifications - prior to commencing construction, the tenant must have delivered to the Host/landlord for its approval the plans, specifications and working drawings. In addition, the Host/landlord should receive and approve all conduit and chase locations.
- Compliance with law - all construction and installation work must be performed in compliance with all laws, ordinances, rules, regulations and codes.
- Liens - all work must be paid for without any liens attaching to the real estate and final lien waivers delivered to the Host/landlord. The Host/landlord also should evaluate whether to require a payment and performance bond or other form of security.
- Pathways - if a rooftop system, safe walking paths should be installed so that the roof is not damaged during construction.

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- Mortgage lender approval - to the extent required by the terms of a mortgage, mortgage lender approval should be secured as a condition precedent.
- Other occupants - all of the work performed by the tenant must be done in a manner that does not unreasonably or materially interrupt or interfere with the use of the property by other tenants or their guests or invitees.
- Workers - all work must be performed by licensed personnel, if required.
- Upgrades - any upgrades required with respect to the utility distribution system, the building electric distribution system, the roof structure or the building structure must be borne by the tenant.
- Indemnity - the tenant must indemnify for any injury or damage.

The site lease also must address the removal of the solar generation system and site restoration. The lease should (a) clearly address the removal obligation (including panels, racks, wires, inverters, etc.), (b) impose a timeframe for completion (since the removal and restoration period normally will not begin until the end of the term), (c) provide for Host/landlord approval of a decommissioning plan, that includes building restoration, (d) require final lien waivers, (e) address abandonment so that if any parts of the system are left in place the Host/landlord can dispose of them without liability to the tenant, and at the tenant's expense, and (f) address security for the performance of the removal and restoration obligations, and timing for posting (on signing of the site lease, on the commercial operation date of the system or some later date). If the system is a ground-mount or a canopy type system, then the lease also should address (a) removal of support structures and footings, (b) removal of any below ground installations, (c) if below ground installations are not removed, then disconnection of all lines and capping of all lines so that no electric current is running through any installations and all remaining installations are flush mounted, and (d) any replanting obligations. The site lease should also address the right of the Host/landlord to buyout or require a surrender of the system at the end of the site lease term.

Repair and Maintenance

Frequently site leases impose a broad maintenance, repair and replacement obligation on the Host/landlord, but only require the tenant to maintain the solar generation system consistent with industry custom. The Host/landlord, to the extent that it is structuring the deal around inexpensive electricity, will require that the tenant has an obligation to not only maintain, but also to repair and replace the system.

A hotly debated issue in site leases turns on system shutdown and relocation for Host/landlord work on the roof. The debate centers on (a) who will relocate the relevant sections of the system, (b) what amount of prior notice is required, (c) who will pay for the relocation, (d) is there a black-out period during which relocation and shutdown cannot occur (e.g., summer months or initial 5 year period following installation), and (e) will the tenant be entitled to reimbursement for lost energy sales, lost renewable energy certificates or credits, or other lost environmental attributes? These are important issues for each side and there is not a one shoe fits all solution.

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Casualty and Condemnation

It is important to note that the tenant will have a substantially greater investment in the system than most tenants have in the typical tenant improvement scheme. Consequently, expect that the tenant will want to impose a substantial burden on the Host/landlord to rebuild if the tenant does not exercise a termination right. In addition, the tenant may want to pursue a claim in condemnation for the full value of its system, moving expenses and business dislocation expenses. A Host/landlord nevertheless must always answer to the ultimate authority - its mortgage lender - therefore in the casualty setting, a tenant should be pushed to take advantage of the new and broad protective policies available in the market which address lost energy sales, lost sale of renewable energy certificates or credits, lost environmental attributes, lost tax value of depreciation and tax credit/tax grant recapture.

Default and Damages

Default and damages provisions are not substantially different from other leases. Consider including, however, the following:

- A cross-default provision pertaining to the power purchase agreement.
- A concern for a remedy of termination for every default because, from a Host/landlord perspective its loss of cheap electricity for its tenants should not necessarily result from every default that might occur.
- Consequential damages - a site lease will typically exclude a claim for consequential damages but will provide that lost revenue from solar renewable energy certificates or credits, lost revenue from other environmental attributes and recapture of tax incentives is a direct damage. If so, then the Host/landlord should be entitled to similar provisions so that lost rent from other tenants, lost rental opportunities, and increased cost of electricity due to having to purchase electricity in the retail market are direct damages.

Assignment

There are a number of issues the Host/Landlord should evaluate in a site lease including:

- Whether the tenant should have a right to assign before the solar generation system has been constructed and is operational.
- Whether the tenant should be able to assign the site lease independent from the power purchase agreement.
- The financial ability of the assignee to take over and construct (if a right of assignment can be exercised prior to completion of construction), operate, maintain, repair and replace the system as well as to remove the system at the end of the term and restore the building and property.
- The experience of the assignee in constructing, owning, operating, maintaining, repairing and replacing solar generation systems of similar size and type as the system in question.

Taxes

Some jurisdictions exempt the value of the solar generation system from the determination of a building's value for real estate taxes. For example, New York exempts systems from factoring into the determination for residential single family to 4 family units. In New Jersey renewable energy systems are exempt from real estate taxation. A renewable energy system includes equipment that is a part of or added to a "...commercial ... or mixed use building as an accessory use and that produced renewable energy onsite to provide all or a portion of the electrical...or general energy needs of that building."²⁸ The laws of each jurisdiction must be examined to determine if any filing is required in order to take advantage of an exemption. In addition, the laws of each jurisdiction must be examined in order to ensure that if the system is not exempt, the parties address payment responsibility.²⁹

Project Documents – Power Purchase Agreement

In a third party ownership structure, a third party owns the system and the Off-Taker will purchase the power from the Provider via a power purchase agreement ("PPA"). The Off-Taker avoids responsibility of ownership, including (a) up front capital cost of construction, (b) on- going operation and maintenance responsibility, and (c) added insurance costs to cover the system and production down time resulting from a fire or other insured casualty. For the Off- Taker, the benefit is the lower cost of electricity.

Many of the issues applicable to the EPC Agreement and the site lease are also applicable (with some slight modification) to the PPA. The following discussion focuses on some of the more significant issues to address in a power purchase agreement, from the perspective of the Off-Taker, that are not otherwise addressed in the above discussions concerning the EPC Agreement and the site lease.

Conditions Precedent

Some PPAs contain a provision that conditions the Provider's obligation to develop the solar generation system and deliver power on (a) the receipt of board or management approval, (b) the receipt of a commitment for third-party financing, (c) the receipt of interconnection approval or (d) approval of the financial creditworthiness of the Off-Taker. If a condition precedent is agreed to, there should be a specific timeframe for the satisfaction of each condition. In addition, the PPA should be clear that the Off-Take will not incur any financial obligation until the conditions precedent are either satisfied or waived. Be alert for a provision that gives the Provider a right to a credit enhancement if it is not satisfied with the financial condition of the Off-Taker, such as a letter of credit or a cash deposit equal to one to two years estimated energy costs. The PPA should be structured so that the obligation is not fixed at the discretion of the Provider. If the Provider determines it is unsatisfied with the financial condition of the Off- Taker then the PPA structure should provide for termination if the parties are unable to agree upon a credit enhancement.

Term

Published Articles (Cont.)

The term should match with the term of the site lease. Some PPAs will include a set of circumstances that permit early termination by the Provider and impose, under such circumstances, an early termination fee on the Off-Taker. If a right of early termination is provided for, the PPA must state that the corresponding right to an early termination fee is limited, if at all to a circumstance involving the Off-Taker's default. This author has reviewed PPAs that grant a Provider an early termination fee in the event of a default of the Off-Taker and also in the event of a casualty, condemnation and change in law. These early termination fee provisions have typically been designed to place the Provider in the position it would have been had the agreement gone through the period necessary to realize fully the federal benefits of accelerated depreciation, tax credit or cash grant, and the corresponding proceeds that would have been realized during that timeframe from energy sales and renewable energy certificate or credit sales. If an early termination fee provision is agreed upon, then it should be deemed a liquidated damage provision so that the Off-Taker will not be liable for any further damages. In addition, if an early termination fee provision is agreed upon, then the issue of consequential damages and any limitation of recovery on the part of the Off-Taker due to a Provider default needs to be drafted for parity.

Purchase of Power

Typically, a PPA requires the Off-Taker to purchase all of the power generated by the solar generation system. This raises the issue whether there are any maximum production limitations. The system is typically sized to the historic use of the facility; however, if the Off-Taker or Host recently undertook any significant energy efficiency measures, then the system sizing/capacity should be reviewed. In addition, the corresponding concern of minimum production requirements should be reviewed in order to ensure as best as possible that the system will produce maximum energy efficiency and the cost of electricity is reduced to the lowest possible cost.

The Off-Taker should beware of any "after tax basis payment obligations." This provision obligates the Off-Taker to compensate the Provider in the event the system is shut down in whole or in part due to the Off-Taker, for example during a roof repair. Payment therefore is calculated on an after tax basis. To the extent payments that would have been made had the system not shut down would have been on a pre-tax basis, the compensation payment should not be any different. Also, the simple fact of imposing a payment obligation on the Off-Taker for an Off-Taker forced shut-down raises the question whether the Provider should compensate the Off-Taker for the payment of a higher energy cost due to a Provider caused shut-down, such as for a voluntary or involuntary outage.

The parties should review the laws of each jurisdiction to determine if there are any applicable taxes that will be imposed on the transaction, such as a sales tax on the electric energy charges.³⁰ Pricing can follow any number of methods, including a percentage of retail energy costs or a fixed price per kWh with an annual percentage increase. In no event should the price per kWh exceed the average weighted price that power can be purchased from either a competitive energy supplier (other than the local electric utility supplier, if applicable) or the local electric utility. There will of course be a debate whether transmission charges, societal benefit charges or the like, and related tariffs should be included in the pricing determination because transmission lines are not being used in the transmission of power from the solar

generation system to the building distribution system.

Also, PPAs will frequently provide for change in law. If a change in law results in a direct material change in Provider's cost to provide solar electricity, the Provider will want the parties to negotiate an adjustment to the kWh rate. First, the PPA should carve out any change in law that impacts environmental attributes, including solar renewable energy certificates or credits. The Off-Taker should not be the Provider's partner in the deal - particularly a one-way partner sharing only in the losses. Second, to the extent that the concept of change in law is included in the agreement, then a reasonable solution is a price adjustment based on fifty percent of the impact so that Provider and Off-Taker essentially split the loss. Some swap products are now available to transfer the risk of a change in law to a financial counter-party for a fee that is either paid by one of the parties or split by both of the parties.

Metering

The PPA Provider will install a meter to measure the electricity flowing from the solar generation system to the building electric distribution system. The PPA should provide that the meter will be kept under seal and not broken unless the meter is being tested or repaired/replaced. An Off-Taker should require that the Provider notice the Off-Taker of any testing. The PPA should provide for meter testing at an agreed upon regular interval, should enable the Off-Taker to require testing at no more than an agreed upon frequency and should provide that if a determination is made as to inaccuracy, that an adjustment will be made if the inaccuracy is determined to exceed an agreed upon percentage.

Maintenance

The maintenance obligation of the Provider will typically require the Provider (a) comply with law and (b) follow prudent operating practice, which means "the practices, methods and standards of skill engaged in by a significant portion of the solar electric power industry for similar size facilities at a particular time, expected to accomplish the desired results." Concerns with this maintenance structure include:

- The clause does not give rise to a consistent and readily identifiable standard, particularly because it is tied to "a particular time" and does not express whose "desired results." This standard could pit the desired results of a particular rate of return and therefore cost against system efficiency and performance.
- The clause does not enable a mortgage lender to evaluate the continued efficiency and performance of the system, which can impact its underwriting of leases in a gross lease building situation.
- The failure to impose a clear maintenance, repair and replacement obligation places the Off-Taker in a position of having to purchase all output without any reasonable assurance the system will be properly maintained. Consequently, if the system production falls below what was anticipated, the Off-Taker will have to purchase at full retail from the utility since it can not commit to an advance purchase of power at a reduced rate from a competitive energy supplier.

Published Articles (Cont.)

There should be a clear covenant by the Provider to maintain, operate, repair and replace the system throughout the term, and keep the system (and the property) free of liens, in compliance with law and in compliance with the interconnection agreement with the local utility.

Default and Damages

The PPA should contain a cross-default provision so that a default under the site lease constitutes a default under the PPA.

Some of the more “extreme” provisions to avoid include:

- A limitation of an Off-Taker’s right to direct damages only, with no right of termination.

Casualty

- An obligation to pay an early termination fee to the Provider, even in the event of a Provider default.
- An obligation to pay an early termination fee as a liquidated damage while the Provider also reserves a right to pursue all other remedies available at law and in equity.
- A right of Provider to remove the solar generation system during a stated period of time following termination (without any obligation to pay rent or maintain insurance), even when the termination is a result of a Provider default.
- A cap on Provider liability - not to exceed total energy payments. Whether a cap is one way or mutual, if any form of cap is agreed upon, there should be an express carve-out for (a) indemnification obligations pertaining to third party claims, (b) insured claims, (c) a loss of a warranty, and (d) situations requiring specific performance.

The apportionment of responsibility after a casualty is extremely complicated and must address a number of issues for which there is not any singular solution. The variety of possibilities of issues is endless. The following are some of the issues requiring resolution:

- Was the casualty the product of an act or omission of the Provider, the Off-Taker or either of their agents, employees, representatives, contractors or subcontractors?
- Is there damage to the building/property but no damage to the solar generation system?
- Can the Off-Taker use the power generated by the solar generation system? If not, or if only a part, what obligation does the Provider have to try to sell the power to a third party? If there is a net loss, what obligation does the Off-Taker have to compensate the Provider for lost energy sales, lost tax benefits, lost solar renewable energy certificates or credits, and lost environmental attributes? Should the Provider have an obligation to insure any or all of the foregoing losses? If so, at what maximum insurance cost, if any?
- If the building/property is damaged but the solar generation system is not, how long will it take to make the requisite repairs/replacement?

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- What happens if the restoration period exceeds an outside term?
- If the solar generation system is damaged, what obligation does the Provider have to re-install the system or repair the damaged sections? What is the timeframe for rebuilding following building/property restoration?
- How does this section of the PPA and the corresponding section of the site lease match in terms of building reconstruction, Host's right as landlord vis-à-vis the Off-Taker to terminate the Off-Taker's lease, Host's mortgagee's right to insurance proceeds and the consequences of its exercise of that right on the site lease, the PPA and the Off-Taker's lease with the Host?
- Does Provider get to extend the site lease and the PPA to match the down time from a casualty to completion of restoration of the building/property and/or completion of restoration of the solar generation system?

Assignment

It is not uncommon to see a provision that limits the Off-Taker's right of assignment. If the Off-Taker has managed to secure a right of assignment under its real estate lease, then it needs to consider matching the PPA provision with the real estate lease.

The Provider will typically have a right to assign to an affiliate, a person acquiring or succeeding to all or substantially all of its assets, a lender or a "Qualified Assignee" (which is a person that has or will contract with one that has experience in the operation and maintenance of a solar system). This clause does not address the size of the systems that the assignee may have experience in owning, a time-line for the assignee to contract with an experienced party, financial capabilities, an assumption of obligations in order to establish privity, and a notice obligation to inform the Off-Taker of the transaction.

Project Documents – Operations and Maintenance Agreement

The contract installer will often offer an operations and maintenance agreement ("O&M Agreement") in conjunction with the EPC Agreement. In the early days of solar development, a contract installer might offer an O&M Agreement that included an initial 3 to 5 years term at little or no charge as an inducement for the more profitable EPC Agreement. Even now, when fees are collected from day one, the cost of the O&M Agreement is not particularly significant in the total picture of the transaction. As with other project documents, there are a number of issues to look for when reviewing an O&M Agreement, including the following:

- An overriding concern in an O&M Agreement is the continuation of the third party equipment warranties. Consequently, it is important that the agreement require all work necessary to continue the validity of all warranties. Workers should be licensed, if required, and approved by the manufacturer, if required. In addition, any maintenance should be consistent with all applicable maintenance manual requirements.

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- The system owner should be given advance notice of any maintenance work so that it or its representatives can be present during the performance of the work.
- Maintenance logs should be maintained consistent with any third party warranty requirements, and if none, consistent with a protocol agreed upon between the parties. A report of all findings during each inspection should be prepared and provided to the system owner. Finally, any deficiency or defect should be noted, any warranty claim prosecuted promptly and all with notice to and the involvement of the system owner.
- Limitations of liability - it is not uncommon to see liability limited to the annual fees paid under the O&M Agreement. If agreed to, liability should not be limited for claims covered by insurance, third party claims subject to indemnity, or claims that result from actions or omissions leading to a loss of a third party warranty.

General Inspection Overview

The following is a general overview of what should be included in a regular inspection:

- The solar panels and racking should be visually inspected for damage, animal nesting and vegetation.
- The combiner boxes should be examined for water tightness and voltage checks.
- Conduit and wiring should be inspected for corrosion and physical damage.
- Inverters should be cleaned, filters changed, inspected for water tightness and physical damage.
- The data monitoring system should be examined generally and any upgrades added.

Relationship Between Property Owner, System Owner, Mortgage Lender and System Lender

The key to the complicated and multifaceted relationship between the property owner, the system owner, the mortgage lender and the system lender is the determination in the particular jurisdiction that the system is and will remain personal property. The determination of when property that is affixed to real property should continue to be classified as personal property or be classified as a fixture and part of the real property is not an easy one.

Determination Whether Personal Property

In *General Motors Corporation v. Linden*³¹ the Court endorsed a three part test to determine when chattels become fixtures:

... the true criterion of a fixture is the united application of the following requisites: (1) actual annexation, or something appurtenant thereto; (2) application to the use or purpose to which that part of the realty with which it is connected is appropriated; and (3) the intention to ... make a permanent accession to the freehold.³²

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The Court characterized this three-part test as a restatement of the prevailing American common law fixtures analysis, composed of the elements of affixation, adaptation, and intention. The issue of whether a solar generation system will be classified as real or personal property (at least under New Jersey law) requires analysis of these three common law elements, with an eye toward determining whether the personal property has become so affixed to real property as to be considered a part of it.

The element of affixation looks not only at whether property has been attached to real estate, but the manner and extent of that attachment. This is a highly factual analysis. The second element of the analysis is sometimes referred to as “adaptation.” The focus is the extent to which the personal property has been adapted to, or integrated into, the purpose served by the real property to which it is attached. In *General Motors* the Court noted that, as to business assets, real and personal property can be united for some business purpose without losing their distinct characters, distinguishing between chattels affixed to real estate that are devoted to business conducted on the property and fixtures devoted primarily to the real estate itself. Another factor in determining the extent of adaptation (and also affixation) is whether the personal property can be removed without material injury to the real estate or to the personal property. The final prong of the common law classification of fixtures is intention to make a permanent accession to the real property. In examining this element, the courts have looked not merely at the subjective intent of the owners but also at an objective view of the “ordinary intent.”³³ Analysis of this element will look at outward appearances and physical facts, as well as industry and trade practices.

Subordination, Non-disturbance and Attornment Agreement

Attached as Exhibit A is a form of Subordination, Non-disturbance and Attornment Agreement (“SNDA”), to be entered into between the property owner, system owner and mortgage lender. Generally:

- The system owner agrees that:
 - its rights under the site lease/PPA are subordinate to the mortgage;
 - should the mortgage lender foreclose, or otherwise secure title, the system owner will attorn to the mortgage lender or a purchaser at a foreclosure sale;
 - it will give the mortgage lender notice of any default of the property owner so that the mortgage lender can cure;
 - there will not be a merger of the site lease/PPA with the fee; and
 - the mortgage lender will not be liable for any act or omission of the property owner under the site lease/PPA prior to the mortgage lender acquiring the premises by foreclosure or otherwise.
- The mortgage lender agrees that:
 - if it acquires title by foreclosure or otherwise, and so long as the system is functioning as designed and the system owner is not in default under the site lease/PPA, then the site lease/PPA shall not be disturbed and the site lease/PPA shall be complied with, even in the event of a sale of the property by the mortgage lender or at a sheriff’s sale.

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- The property owner agrees that:
 - so long as the mortgage loan is outstanding, it will not make any change to the site lease/PPA without the mortgage lender's consent.

Property Owner and Mortgagee Waiver

Attached as Exhibit B is a form of Property Owner and Mortgagee Waiver to be entered into between the mortgage lender, the system lender and the property owner. Generally:

- The mortgage lender and the property owner agree that:
 - They approve the installation of the solar generation system;
 - They consent to the grant by the solar system owner to the system lender of a security interest in the system and all environmental attributes, and the filing of a UCC-1 financing statement;
 - They have no interest in the solar system;
 - The system lender can exercise all rights as a secured party under the UCC; and
 - The system lender can enter onto the real property subject to access terms and related indemnities.
- The system lender agrees that:
 - It has no security interest in the real property; and
 - Any entry onto the property to assert rights with respect to the solar system is subject to certain access terms and an indemnity.
- The parties agree that:
 - The solar system is considered personal property and will not become a fixture.

The system lender may also want the property owner to agree (a) to provide it notice of and an opportunity to cure any system owner default, and (b) that system lender is not obligated to assume any obligations of the system owner.

The parties may want all to also agree to an exchange of estoppel certificates upon request.

Conclusion

Solar transactions are complex and require that multiple parties work with a solution oriented approach if the varying interests of all concerned are going to be fairly addressed. Although complex, solar projects afford a property owner an opportunity to maximize the income from its real estate, enhance the marketability of its real estate and display a corporate commitment to the environment and sustainability.

© 2012 Jack Fersko. Mr. Fersko is a member of Greenbaum, Rowe, Smith & Davis, LLP, where he Co-Chairs the Alternative Energy and Sustainable Development Group. The following provided much appreciated assistance in the preparation of this article: Ken Bills, Co-Chair of the Alternative Energy and Sustainable

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Development Group, Maura Blau, member of the Alternative Energy and Sustainable Development Group; and Marjan Disler, member of the Alternative Energy and Sustainable Development Group.

Footnotes

¹ The number of companies preparing sustainability reports annually has increased between 17% and 20%. 43 Toxics L. Rep. (BNA), No. 44, at 2865, 2012.

² *Id.*

³ Sky Stanfield, Erica Schroeder & Thad Culley, Sharing Success – Emerging Approaches to Efficient Rooftop Solar Permitting, Interstate Renewable Energy Council Inc.

⁴ Avery Fellow, Wal-Mart, Costco Are Top U.S. Retailers Using Solar Power at Company Facilities, 43 Env't. Rep. (BNA) No. 36 at 2343 (September 14, 2012).

⁵ *Id.*

⁶ U.S. Solar Industry Makes Bright Future for Swedish Retailer, CommercialTenant'sLeaseInsider, November 2012.

⁷ Avery Fellow, Wal-Mart, Costco Are Top U.S. Retailers Using Solar Power at Company Facilities, 43 Env't. Rep. (BNA) No. 36 at 2344 (September 14, 2012).

⁸ Yuliya Chernova, They Paved Paradise and Put Up A Parking Lot, Wall Street Journal, Sept. 17, 2012.

⁹ Solar systems may be developed on the vacant portions of rooftops. Rooftop developments are less visible than other forms of solar development and usually less expensive; however, as will be discussed further in this article, rooftop developments present a number of issues relative to roof structure and issues of access. Ground-mounted systems offer visibility to the community; however, such systems usually are more expensive than rooftop systems and impact topography and add to impervious coverage, potentially presenting additional development issues. Finally, there are parking canopy systems that offer a benefit of covered parking, but also are more costly than the rooftop development and, if not properly designed for, can present drainage/icing issues.

¹⁰ Net metering is known as behind the meter generation. A solar system that is connected behind the electric utility customer's meter, as distinguished from a system connected directly to the utility grid, is considered a net metered project. Net metering allows for the measurement of both electricity consumed from the utility grid and electricity sent to the utility grid because the solar system at a particular moment in time is generating more electricity than is needed by the customer's facility. At that point, the meter will actually spin backwards. Typically, at the end of an energy year, there will be a "true-up" to determine whether there is any excess energy that went to the utility grid.

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¹¹ The following is not intended as an exhaustive analysis of the multitude of state legislation and incentives designed to promote solar development, but rather is intended to provide the reader with a general sense of the nature of the legislation and incentives established at the state level that have spurred solar development.

¹² Database of State Incentives for Renewables & Efficiency, <http://www.desireusa.org> (last visited December 9, 2012).

¹³ See New Jersey Electric and Energy Competition Act, N.J.S.A. 48:3-49 *et. seq.*, as amended by the Solar Energy Advancement and Fair Competition Act, P.L. 2009, c. 289 and as further amended by the Solar Act of 2012, signed into law July 23, 2012, P.L. 2012, c. 24; See also N.J.A.C. 14:8-2.1 *et. seq.*

¹⁴ Energy year 2014 begins June 1, 2013.

¹⁵ Power is measured in kilowatts or watts while energy is measured in kilowatt hours. 1 gigawatt ("GW") equals 1 billion watts, 1 million kilowatts and 1 thousand megawatts. 1 megawatt ("MW") equals 1 million watts and 1 thousand kilowatts. 1 kilowatt ("Kw") equals 1 thousand watts. 1 MW hour ("MWh") equals 1 thousand kW hours ("kWh").

¹⁶ See Pennsylvania Alternative Energy Portfolio Standards Act, 73 P.S. Section 1648.1 *et. seq.*, as amended, ARRIPPA v. Pennsylvania Public Utility Commission, 966 A.2d 1204, Pa. Comm. LEXIS 79 (2009), In re Ownership of Renewable Energy Certificates ("RECs"), 389 N.J. Super. 481, 913 A.2d 825 (App. Div. 2007).

¹⁷ For an excellent discussion of solar development issues generally and solar-related financial incentives see Craig M. Kline, *Ch. 17 - Solar, in The Law of Clean Energy – Efficiency and Renewables*, ABA Section of Environment, Energy and Resources, (2011, Michael B. Gerrard, ed.) (hereinafter "Kline").

¹⁸ See Database of State Incentives for Renewables & Efficiency, supra.

¹⁹ See Kline, supra, at 405 – 406.

²⁰ See generally, Kline, supra, Stanfield et al., supra, and Database of State Incentives for Renewables & Efficiency, supra.

²¹ The United States Environmental Protection Agency ("EPA") has identified and mapped over 11,000 potential sites for the remediation and development of projects involving solar and other forms of alternative energy. The EPA handbook that includes such mapping can be obtained at http://www.epa.gov/renewableenergyland/docs/handbook_siting_repowering_projects.pdf.

²² Public Utility Regulatory Policies Act of 1978, 16 U.S.C.S. §2601 *et seq.* (1978).

²³ See Kline, supra at 401 – 402; see also New York State Elec. & Gas Corp. v. SARA-NAC Power Partners, L.P., 117 F. Supp. 2d 211 (N.D.N.Y. 2000) for a general discussion of the exemption of qualified facilities from federal and state regulations.

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²⁴ For an in-depth analysis of the federal financial incentives see Valerie A. Blair and Mark S. Hennigh, Stick It Where The Sun Shines: Incentives For Installing Solar Facilities On Commercial Property, The ACREL Papers (The American Law Institute, Continuing Legal Education)(Spring 2013).

²⁵ There are a number of sophisticated ownership/financing techniques that are available that are beyond the scope of this article, including a sale-leaseback structure and a partnership flip structure which effectively provide ownership rights and benefits to the equipment owner or allocate cash and tax benefits to the equity investor, as the case may be, for a set period of time after which ownership or allocation, as the case may be, shifts. For an excellent presentation of the various ownership and financing techniques employed in the clean energy setting, see Kline, supra at Ch. 17 and Bradon W. Penhoet, *Chapter 10 - Financing Structures and Transactions, in The Law of Clean Energy - Efficiency and Renewables*, ABA Section of Environment, Energy and Resources, (2011, Michael B. Gerrard, ed.).

²⁶ It is essential to review carefully these policies. Some policies, marketed as protecting against a “loss of revenue from the sale of energy,” actually only insure against a loss arising from the sale of energy to the grid, which will not cover a net metered project. Also some policies provide that if a building is vacant for longer than a stated period of time, the policy’s “green components” are nullified. See generally Jack Fersko, Insurance Issues Affecting Green Development, ABA Probate & Property (Sept./Oct. 2010).

²⁷ It is interesting to note that the title industry is now entering the alternative energy field. The industry has developed 7 new energy project related endorsements to address a wide array of transaction structures, including related loan policies. See Janice E. Carpi, Marvin N. Bagwell and Robert S. Bozarth, But Wait – There’s More! The New and Revised 2012 ALTA Endorsements and Update on MERS, The ACREL Papers (The American Law Institute, Continuing Legal Education) (Fall 2012).

²⁸ *N.J.S.A.54:4-3.113a*.

²⁹ See Watson Cogeneration Co. v. County of Los Angeles, 98 Cal. App. 4th 1066, 120 Cal. Rptr. 2d 421 (Cal. Ct. App. 2002) wherein the court found it proper for the county tax assessor to consider the income stream from an above-market price power purchase agreement in the property tax valuation.

³⁰ See South Carolina Revenue Ruling 10-10, determining that a utility customer’s use of excess solar electricity “banked” by the customer with the utility is use of the customer’s own electricity and therefore is not subject to a sales tax.

³¹ 150 N.J. 522 (1997).

³² *Id.* at 534, quoting Brearley v. Cox, 24 N.J.L. 287, 289, 1854 N.J. Sup. Ct. LEXIS 48 (1854).

³³ R.C. Maxwell Co. v. Galloway Twp., 145 N.J. 547, 549 (1996).