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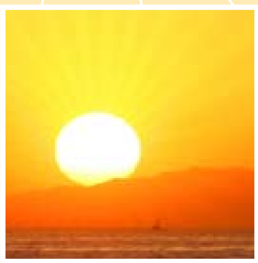
LEX HELIUS

The Law of Solar Energy

A Guide to Business and Legal Issues



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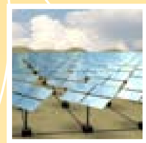

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WELCOME TO

LEX HELIUS: THE LAW OF SOLAR ENERGY

Dear Member of the Solar Community,

As technologies develop and commercial acceptance grows, solar is increasingly being accepted as a viable generation source by public utilities, commercial ventures and the general public. The growth of the industry in America over the past few years has been phenomenal. There is increasing experimentation with policies intended to continue to encourage the growth of solar generation such as feed-in tariffs and simplifications in the regulatory approval and transmission interconnection processes. Prior to the financial market events of the past year new sources of investment capital were flooding into this niche. While access to financing is currently constrained, government programs such as the American Recovery and Reinvestment Act of 2009, and increasing compliance levels under renewable portfolio standards should continue to push growth in this area. Power buyers large and small continue to be drawn to solar as a way of demonstrating their independence from traditional generation sources and desire to play a part in moving America towards a more independent energy future. While solar energy may not yet have reached "grid-parity," its economics of peak period availability and of stable "fuel cost" are increasingly attractive and competitive. The industry is vibrant and ready to move ahead.

Nonetheless, solar projects, like other renewable generation projects, are subject to a plethora of real property issues, regulatory and permitting requirements, interconnection, and power purchase negotiations, financing challenges, tax matters and construction contracting.

Recognizing these challenges, and as part of our commitment to the growth and success of the renewable energy industry, in 2003 Stoel Rives developed its first *Law of* ... publication. Today we are introducing a revised and updated second edition of *Lex Helius: The Law of Solar Energy*, the newest installment in our continuing efforts to provide easily accessible information for individuals and companies interested in growing Americas renewable energy resources. This guide contains insights we have gained from practical experience assisting participants in numerous solar photovoltaic projects covering a diverse range of sizes and installations, as well as our experiences during the last 18 serving the U.S. renewable energy industry.

We hope you find this useful.

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Chapter One
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Solar Project Property Rights: Securing Your Place in the Sun—

Kathleen J. Doll, Janet F. Jacobs, Howard E. Susman

Developing and operating a successful solar energy project requires more than having the latest solar technologies. Low-maintenance, high-return projects start with leases and easements that ensure long-term site rights, undisturbed access, exposure to solar rays, and offer flexibility for project modifications based on rapidly emerging technologies. The form and substance of solar leases and easements vary based on the type of system (Photovoltaic ("PV") or concentrated solar power ("CSP"), for example), the type of installation (rooftop or ground-mount), and the type of landowner or host (not-for-profit, commercial, residential, or utility scale). In light of these and other variables, this chapter focuses on a few common but key issues: establishing the scope of rights and property under a site lease, easement, or government right-of-way; addressing critical title problems; and addressing water rights, statutory solar easement requirements, and other property matters.

I. Distinguishing Land Rights and Identifying Project Needs. Among the first steps in developing a solar project is securing rights to construct, operate, and maintain the project. Typically, site rights are established through a lease or easement agreement. In order to maintain the deductibility of land cost for federal income tax purposes it is usually best not to acquire the fee for the project entity. For large, utility-scale CSP projects, however, purchasing fee title to a parcel may have economic and water rights advantages. Project counsel should also be mindful of the relative advantages and disadvantages of leases and easements in various states. These issues can range from differences in tax treatment to nonrecognition of easements for possessory uses. For rooftop PV systems and small-scale ground-mounted systems, an easement agreement offers secure use rights to property or buildings that are also occupied and used by others. Large-scale PV and CSP projects may be better served by leases that secure exclusive occupancy for the project. Project developers should examine their project needs in terms of spatial requirements; exclusivity; the distribution, transmission, or use of the power generated by the project; energy storage; and resource demand (such as water, surplus power supply, and thermal energy storage).

A. The Solar Project Property Agreement.

1. The Purpose and Scope of the Interest. Lease agreements provide the broadest occupancy and use rights for a project site because they give the developer the right to possess and use the property undisturbed by the landowner or third parties. Typically the developer does not share the property with any other occupant, and the developer has unrestricted access to and from the property. Lease agreements are ideal for CSP projects and ground-mounted PV systems when the landowner conducts only minimal activities on the property, such as grazing or minor agriculture, or when the property is unoccupied. On the other hand, leases may be less suitable for certain rooftop PV systems or shared spaces (*e.g.,* garages and parking lots), because the developer/project entity is not the only occupant of the space. In these situations, a lease that gives the developer control of the site, and the coextensive responsibility for the site, may exceed the needs and comfort level of many developers.

Easements can be ideal agreements for rooftop and smaller-scale PV projects when the project developer and the project share a larger space with the landowner or third parties. An easement is a real property interest whereby the landowner grants to the developer a right to use the property in a form which cannot be revoked and which can be pledged as security for financing. An easement secures to the developer a right to the property and is defined by a scope of use, exclusivity (or nonexclusivity), a term, and certain responsibilities and rights of each party to the easement. As it lacks these characteristics, a license or revocable permission to conduct an activity on the property is unsuitable for confirming project site rights.

Easements are well-suited for rooftop or shared-space installations because they enable the developer to use a portion of a larger piece of property or building, and limit the developer's responsibility for areas outside of its use.

2. **The Scope of Property Subject to a Solar Project Property Agreement.** A developer of an expensive and sensitive solar power system will typically seek to maximize the amount of land subject to a lease to protect the system from dust, dirt, debris, and vandalism and to provide flexibility in selecting the precise location for the system and any ancillary facilities. However, unlike wind projects and some ocean and tidal projects, solar projects are land-intensive. A typical wind project uses, on average, one acre to produce one megawatt of energy. A wind developer might lease a 50-acre parcel, use 10 percent of it, and assure the landowner that it may freely use the remaining portion for agriculture while profiting from the wind power produced on the land. On the other hand, solar projects can require up to five acres for every megawatt produced, leaving the landowner with less open space for its own use and, consequently, greater motivation to limit the amount of land subject to the lease agreement and a greater expectation of rents from the project.

3. **Potential Resolutions to the Scope of Land Requirements.** In utility-scale solar projects, there are few alternatives to leasing large amounts of land and retaining exclusive control over those lands for the life of the project. Unlike wind development projects, in which the landowner retains the right to farm and use the property not occupied by wind facilities, solar projects may take large amounts of land out of agricultural or other active use. To ensure the cost-effectiveness of large-scale projects, developers will want to seek out lands with low agricultural or mineral value, and research the value of the land and its potential uses to negotiate a lease that provides income to the landowner while maintaining profit margin for the prospective project.

When it is not possible to select land with low alternative-use value, resolving the possible conflict regarding the amount of land subject to a lease agreement will likely involve structuring payment terms under a scheme that ties lease payments to the amount of land used and the amount of energy produced by the project. In addition, other devices may give the landowner comfort that the developer will minimize the project's impact on the land and make available any unused space for other uses by the landowner. For example, a lease may provide:

- A minimum annual rent payment based on the amount of acreage under the lease. In an agricultural area, this rent may be based on the land's agricultural value.

- A megawatt-based payment if the energy produced by the project exceeds the minimum annual rent payment, so that the landowner reaps the rewards of the sun but is not penalized if it is cloudy for months.

- A provision whereby the developer consults with the landowner during the scoping stage regarding the location of the project and its related facilities. Consulting with landowners goes a long way toward assuring them that their land will be used efficiently and in the least intrusive manner possible.

- A phased approach to development in which the developer leases a large amount of land but then releases lands that are not necessary for the project.

4. **Easements: Project-wide and Ancillary Rights.** The benefits of an easement for a rooftop or ground-mounted system project may be the same as its drawbacks because the developer does not exclusively possess the right to the property. An exclusive easement will give a developer the sole right to use a portion of the landowner's property, but when a project is located on a roof or over a parking garage, in order to protect the developer's investment, the easement must also ensure that the landowner and third parties will not interfere with the developer's use. Key components of a solar project easement include, among others:

A Specific Term. Traditionally, easements are perpetual in nature (for so long as the allowed use continues), whereas leases are established for a set period of time. Developers using an easement will want to incorporate a term of 20 to 30 years, as they would under a lease.

A Right to Install Fixtures and System Equipment. As with a solar project lease, an easement should include explicit rights to install system equipment and related fixtures that remain at all times the property of the developer. The right to use a rooftop or a portion of land is not worth much without the right to install the necessary equipment on that property.

A Clearly Delineated Scope. Rooftop projects and projects sharing common boundaries with unrelated facilities (for example, box stores, parking lots, and garages) may require only portions of the building for the actual project, but the developer and its installer will need access to and from the project area, construction equipment areas, and utility rights. These rights should be clearly delineated in the agreement to protect the developer's investment and put others on notice that even if the store is closed or a stairwell is off-limits to the public, the developer's rights to access and use those areas are secured.

As part of the scoping of a project in a shared-use situation, developers will want to give careful consideration to the myriad uses and needs they may have throughout the periods of resource assessment, construction, operation, and maintenance of a project. Construction, ongoing access, and the right to move, repair, and replace equipment are just a few of the considerations to take into account when crafting an easement for the life of a project.

For projects using a lease agreement, that agreement should also include access, transmission, and other rights to use the property. Developers should work with the landowners to create mutual non-interference provisions and establish access and use rights that protect the developer's project while accounting for other ongoing uses or needs of the property.

Finally, with rooftop and parking structure installations come certain considerations not applicable to isolated and secured system installations. Project site agreements should account for damage to systems from vandalism or from the landowner's invitees or others; responsibility for roof or parking lot maintenance, including any costs associated with resultant system shutdowns; and ongoing access to sunlight. (See also, Section III.B below.) These and other considerations should be part of the early scoping and project planning stage of development.

B. Alternative Land Rights: Fee Interests; Federal and State Lands. Utility scale CSP and PV systems are uniquely suited for large swaths of flat land. In fact, with current technology, the slope of most project sites should not exceed 1 percent. Relatively flat, wide open spaces in areas with plentiful sunshine call to mind the American Southwest and the plains states (western Kansas, eastern Colorado, Nevada, Arizona, New Mexico, and western Texas). These lands are frequently owned by private landowners, but more often they are owned by the federal or state government, or they are Native American tribal lands.

State and federal lands are the jurisdiction of the departments of state lands and the Bureau of Land Management, respectively. Each state and the federal government has a unique scheme for leasing or licensing its public lands. Many of these departments are well-acquainted with granting grazing or mineral rights, but the installation of large-scale solar projects is, at present, foreign to many of them. Developers should explore the various schemes available from the state or federal government for the land at issue.

The Bureau of Land Management has adopted regulations specifying procedures for obtaining site rights, called Right of Way Grants. The regulations allow resource assessment, construction, and project operations. They provide for project specific rent (based on appraisal, with a phase-in period during project development) and terms of the grants (generally not to exceed 30 years). Applications are processed on a "first-come-first-served" basis, with the possible exception of applications for sites within areas subject to study as best suited for solar energy development (which may be allocated competitively). The process includes BLM consideration and approval of a detailed Plan of Development for each project and full environmental review in compliance with the National Environmental Policy Act. BLM's informational memorandum on Solar ROW grants may be found at: http://solareis.anl.gov/documents/docs/BLM_Solar_IM2007_097.pdf.

Each option for securing site rights on public lands should be examined, and any potential drawbacks based on time, lack of exclusivity, and costs should be evaluated to ensure that the project's long-term value is maintained and that the investment is protected from vandalism, potentially disruptive uses (shading!), or other interference during the life of the project.

Leasing or obtaining a right-of-way on Native American tribal land is an attractive possibility in the American Southwest where wide open spaces with a steady supply of solar radiation are the norm. Developers should be aware that leases and rights-of-way on Native American tribal land require approval by the Bureau of Indian Affairs ("BIA"), and any agreement that encumbers tribal land for a term of seven years or more also triggers BIA review. Projects sited on Native American tribal land are also subject to federal environmental and other statutory review requirements. For example, projects on Native American tribal land will almost always require an environmental assessment under the National Environmental Policy Act. Thus as part of the initial siting evaluation of a project, developers should assess sacred sites (including burial grounds, native plant harvesting areas, and ceremonial locations). Developers should consult with the tribe itself regarding unique or archaeological resources on the proposed site because each tribe is in the best position to evaluate and determine which sites have cultural relevance and to weigh the potential issues associated with leasing such lands for solar projects.

When exploring potential projects on Native American tribal land, as with federal lands, developers should account for the time that likely will be involved for federal agency review and approval, plus any associated environmental and cultural resource studies. These may add significant cost and time to a project's development period and construction. Attorneys, local staff, and tribal contacts who are knowledgeable in tribal land leasing requirements and the intricacies of permitting and siting projects on particular tribal land are invaluable resources for navigating the statutory requirements and any review or permits that are specific to the land at issue.

II. Overcoming Title Roadblocks. Securing an interest in property for a solar project requires more than just a signed agreement. If a rooftop or utility scale project site is encumbered by existing leases, easements, mineral rights, or other exceptions to title, the project developer takes its interest in the land or site subject to those existing rights. If title to the land were to fail after construction of the project, a developer could face significant losses and defense costs. Consequently, the savvy developer should request and obtain a search and examination of the title to the lands on which a solar energy project will be sited, and purchase a policy of title insurance representing the amount of its investment in the project. A survey of the land is also advisable. These principles apply equally to a new acquisition or the financing of an existing solar energy facility.

A. Title Reviews. It is always necessary to obtain all documents in the public record relating to the proposed project lands to (1) determine the person or entity vested with title, (2) determine whether the title is subject to liens or mortgages that create unacceptable risks to the solar project, and (3) discover all defects or other encumbrances, such as easements for utilities, road rights-of-way, mineral and timber rights, or other interests held by people or entities other than the landowner that might prevent construction or operation of the project as planned. It is critical to obtain the title information as soon as possible and review it thoroughly to make certain that all interests of record are discovered, disclosed, and analyzed carefully. Insurable title to the lease or easement is a key factor in project financeability.

B. Determining Whether to Undertake Curative Measures. Once all of the information contained in the preliminary commitments for title insurance have been reviewed, it is necessary to cull those title issues that must be corrected or cured from those that will not impair the vitality of the project and therefore may be permitted to remain on the title. If a leasehold or easement interest is obtained from someone claiming to own the land, when, in fact, the fee simple title of record is vested in another, the title company will require correction of the title before a policy can be issued. Most often mortgages must be addressed in some manner that will permit the lender's interest to coexist with the project. Easements or rights-of-way can also be problematic for on-the-ground solar projects—some must be adjusted to allow construction of the proposed project, whereas others may not create a risk to the project at all.

C. Curing Title Defects. The best start to the curative process requires selecting and preparing documents based on each type of title issue. For existing mortgages on the property, developers should work with their attorneys to evaluate whether a subordination agreement is required, or if a nondisturbance agreement will suffice. For existing easements, the developer should evaluate whether a consent and crossing agreement is necessary, or if the easement holder will modify its easement to allow the solar project or related facilities to cross or overlap its easement area.

A utility, a lender, another landowner, or some other person or business with an interest in the title to the project property may not always be interested in helping to solve the developer's title problem. Some may just as soon not return a call and may avoid dealing with the matter entirely. Nevertheless it is critical to secure their attention to the issue in the most nonthreatening manner possible. Parties with a legal interest in a project site may affect or be affected by the project for the long term. Initiation and maintenance of good relationships with such parties may solve and avoid problems during development and throughout the project's life.

D. Mineral Rights. Mineral rights may be uniquely challenging for developers of utility-scale projects. Projects that require large areas of land or several different lots may share those lands with existing mineral rights holders, such as oil and gas companies, railroads or their successors, or other persons or entities, including governmental bodies.

Broadly speaking, the term "mineral rights" refers to the privilege of earning income from the sale of oil, gas, and other valuable resources found under the surface of the land. Note that mineral rights are rights to whatever is below the surface of the land, and do not indicate that the mineral owner also owns the surface of the land. Indeed, the mineral rights owner has the superior right to use as much of the surface as is reasonably necessary to extract the minerals ("surface rights"). Absent release, waiver, subordination of mineral rights by its holder or an agreement not to interfere with the solar project operations, the presence of mineral rights is an obstacle to project financing. It is often possible, however, to insure title around mineral rights which are shown to be ancient, untraceable, or otherwise abandoned.

On occasion, the holder of mineral rights may be willing to relinquish its surface rights for compensation. One option is to enter into a long-term lease under which the mineral owner waives surface rights in exchange for a royalty based on project revenue, similar to leaseholder rent.

III. Other Potential Property and Land Issues.

A. Water Rights for Concentrated Solar Power Projects. Water requirements for CSP projects require careful consideration and planning. When a project is located in a semidesert or desert environment, the solar radiation is plentiful, but water may be scarce or severely limited. Savvy project developers should give early and careful consideration to potential sources of water. A few of the critical questions to ask include:

- Is there a source of water currently in place on the property-a surface source (such as a river or canal), a municipal source, or a groundwater well?
- If there is no surface source, is water available from an aquifer or from a local source?
- What water laws and restrictions will affect the ability to obtain water for the project?
- If a well or surface diversion is required to bring water to the project, what water rights or licenses are needed and how much time is needed to obtain those rights?
- What are the ramifications of water use for permitting and environmental review of the project?

A clear understanding of a project's water needs, the availability of water at a project site, and the time and cost involved in obtaining water is essential to establishing a project's construction and operation timeline, budget, output, and, ultimately, its feasibility.

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B. Access to Sunlight: State and Local Government Laws. Approximately 34 states have presently passed laws or taken measures to promote the installation and use of solar energy systems. The states have two primary mechanisms for ensuring that the "green" property owner can access sunlight to operate the system:

1. Allowing neighboring property owners to voluntarily grant solar easements that, like any other property right, must be documented and recorded in accordance with local requirements; and

2. Outlawing the imposition of prohibitions on the placement of a system in a community, and of unreasonable restrictions on the placement of facilities such that their installation, operation, or functionality is adversely impacted.

Any grant of a property right must contain certain legal elements no matter where the property is situated. Many states require the grant of easement to describe the dimensions of the easement, the estimated amount of sunlight directed to the system, any permitted shading by vegetation and other plantings, the corresponding reduction in access to sunlight, and any proposed compensation to the grantor of the easement. The solar easement must also contain any state-specific requirements. A state's focus may be affected by weather, terrain, or the character of the area. Some states and/or local governing bodies can be height- or design-sensitive (California, Colorado) or locale-sensitive (Hawaii), or may focus on visibility and placement (North Carolina), orientation (Wisconsin), zoning (Rhode Island), or setback issues (Oregon). Any terms or conditions for revising or terminating the easement should be included as well. The contracting parties may include their own remedies for breach of the easement, allowing a court to order any interference with the system to stop, and awarding damages for the capital cost of the system, any additional energy charges caused by the breach, and attorneys' fees and costs.

Chapter Two
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Power Purchase Agreements: Distributed Generation Projects—

Stephen Hall, Morten Lund

I. Introduction. The term "distributed generation" is applied to a very wide range of facilities using different technologies and varying in size. The one common element of all distributed generation projects is that they are assumed to be located "on-site." This means that they are designed to make minimal direct use of the existing transmission grid. However, current distributed generation technologies are intermittent in nature. That means they can only produce electricity under certain circumstances: in the case of wind, when the wind is blowing; in the case of solar, when the sun is shining (or at least up). Consequently, distributed generation facilities will typically connect "behind the meter" to the site owner's building systems, aka, the "site host." Connection to the grid "at the meter" is still important for the site host, though, because of the need to access electricity supply when the distributed generation facility is not generating or is not capable of meeting the full needs of the site host.

For distributed generation solar photovoltaic ("PV") installations, the "on-site" nature of the project is typically a far larger complicating factor than the intermittent nature of its output. Unlike larger utility-scale projects, distributed generation solar PV may be located in either urban or rural areas, on rooftops or on the ground, on larger structures or smaller structures, with clear solar access or in congested areas. In addition, the site "host" may or may not be the power purchaser. Consequently, there is a significant potential for strongly conflicting interests between the passive host with no interest in the project and the power purchaser that wants the project output and what each is willing to accept as reasonable risk allocations with the project developer.

Each of these distributed generation aspects must be addressed somewhere in the project documentation. If the power purchaser and the site host are the same, it makes little difference whether the relevant provisions are put in the site lease or the power purchase agreement (the "PPA"). However, the site can always be sold or the site host can lease or sell the premises, so there is no single answer that will work in all situations. In addition, there may be situations where a license, or right to use the project site, may be preferable to an actual lease of the site. The potential for this issue in particularly present when the site host is a municipal or other type of governmental entity. To reflect the particular nature of distributed generation facilities and the growth in larger utility-scale PV or solar thermal projects, we have split our discussion of PPAs into two parts. The first part discusses distributed generation solar PV PPAs. The second part discusses solar PPAs in the context of larger utility-scale projects. To the extent that there are issues in common, the first part will refer the reader to those sections of Chapter Three, Power Purchase Agreements: Utility-Scale Projects for discussion of those issues.

A. The Parties.

1. **The Project Owner/Seller.** The ownership of a distributed generation solar PV installation is a tax-advantaged investment. Indeed, due to the relatively small electric output of these installations over the past few years the tax benefits have been a far more important element of creating a viable project than were projected revenues from the sale of electric energy. Consequently, the project owner/seller was relatively less interested in structuring the PPA to maximize revenues from electricity sales than it was in protecting and enhancing the available tax benefits. This dynamic may be changing. If reductions in the cost per installed watt of solar PV installations hold for the next few years, the revenues generated from the sale of

electricity may become a larger of the value of the project. Since the available tax benefits are set at a fixed percentage of the project costs, the relevant value of tax benefits remains the same. On the other hand, it is unclear how much the current reduction in project costs arises from temporary imbalances in the supply of solar PV panels. It is also unclear how much any technological developments over the next few years will help keep panel costs down. Additionally, at least for projects that can meet the tests by December 31, 2010, there is the option of applying for a cash grant in lieu of federal investment tax credits. Since no tax equity investor return is involved in the cash grant, the amount of cash made available for a project through the cash grant program should be higher than can be realized through the traditional sale of federal investment tax credits to a third-party investor. However, the cash grant program raises a new problem for developers since it does not attach any monetary value to the accelerated depreciation available on solar PV projects. By electing to use the cash grant program, for the next 18 months the developer must either ignore the embedded monetary value of the accelerated depreciation or must find a tax investor interested in the accelerate depreciation "stripped" from the investment tax credits. These dynamic changes in the underlying economics of solar PV demonstrate that this marketplace has not yet reached a steady state.

Some of these considerations are temporary. For example, the current expiration for the cash grant program is December 31, 2010. For more detail on the cash grant program and other Stimulus Bill impacts on energy, see our publication *Show Me the Money, The Law of the Stimulus Package*. The current expiration date for the federal investment tax credit for solar is the end of 2016. Consequently, after the Stimulus Bill provisions drop off, the distributed generation solar PV market will still be dealing with the current version of the federal investment tax credit, unless some totally new and as yet unforeseen program is adopted by Congress. These existing federal investment tax credit provisions still have relevance, and our discussion below is premised on the application of these provisions.

To facilitate the pass-through of tax benefits and available subsidies, the project owner/seller in a distributed general solar PV project will usually be a limited partnership or limited liability company. The entity will expect to be able to pass through to its partners or members the tax benefits, revenues from power sales, and revenues from the sale of Renewable Energy Credits that represent the environmental benefits and attributes of the noncarbon-based electricity generation ("RECs"). Depending on the particular forms of subsidy (such as state tax credits, state cash subsidy payments, or solar carve-outs in the locally enacted renewable portfolio standards designating the amount of generation local utilities must derive from renewable sources by certain benchmarks), the project owner may have more or less interest in actually owning the facility after the tax credit recapture and direct subsidy period has ended (though there are other tax considerations relating to the "profit motive" test that may require the project owner/seller to need a longer-term ownership of the installation). In other words, the project owner/seller typically has little interest in actually operating or structuring itself as a utility. Solar PV lends itself well to this lack of interest in being a "real" power generator since solar PV is generally considered to have an extremely low level of required maintenance and an extremely high level of reliability. Consequently, the project owner/seller wants to minimize risks to its expected stream of tax benefits, power sales revenues, and REC sales, particularly those that the project owner/seller considers to be within the control of the site host or power purchaser to prevent or avoid.

The project owner/seller's willingness to allow the tax benefits and subsidies available to a project to be passed through to third parties is fundamental to a tax equity investor being willing to provide financing to a transaction. The tax equity investor typically has an even larger desire to exit the transaction after the tax and subsidy benefits have been extinguished than a developer/owner. For this reason, many distributed generation solar PV transaction have been structured using a "flip structure" where the tax equity investor starts with typically 99 percent of the ownership interests in the pass-through-project-owning entity, which "flips" to a 5 percent interest after the tax equity investor has received the return that has been negotiated between the parties.

Additionally and regardless of the specific structure utilized, the party that expects to be entitled to the federal investment tax credit must be the "owner" of the installation on the date the installation is "placed in service" for federal income tax purposes. Consequently, all structures for distributed generation solar PV projects that are premised upon the need to have the tax equity investor in ownership prior to the placed in service date. Many potential investors want to avoid any construction period risk by delaying their contribution until after the installation is completed and proven to be functioning at its intended design specifications. Project developers should be aware of the problems that can arise if the investors are not willing to put any funds at risk prior to completion of the project.

2. **The Buyer.** The power purchaser typically is interested in supplementing its power off-take from the grid at a specific location. This can be a single manufacturing facility, an office building, an automobile dealership, a warehouse, a school, a hospital, or a public facilities maintenance building. As the market is realizing, there is an enormous opportunity to place safe and passive solar PV installations in a wide range of locations. The physical constraining factors are the relatively low output of current solar panels and the resulting large amount of space required to install enough panels to generate a significant output. In addition, there frequently are state regulatory hurdles that make it difficult to install as many panels as a site host might have room for because of limitations on the number of possible power purchasers (customers) that can be served without becoming subject to state public utility commission regulation. See Chapter Five, Regulatory and Transmission-Related Issues. For these reasons, the power purchaser from a distributed generation solar PV facility will usually be either a party whose power needs fit extremely well with the daytime generation curve of solar PV, or a party that is looking for a supplement (or hedge) against its exposure to uncertain future market rates for electricity charged by its local serving utility. In essence, this power purchaser just wants to receive the power with the minimum amount of additional risk and financial obligation. It wants green power but has only a limited interest in paying significantly more for that power than it would cost to just "flip the switch" and take it from its local utility.

3. **The Site Host.** If the site host and the power purchaser are not the same, the site host can become a silent partner (or at least an ever present consideration) in the negotiation of the PPA. Although not as true for a ground-mount installation, a rooftop installation is generally in place for a long time on a structure that was probably not specifically designed to accommodate a solar PV installation. This can raise a number of questions regarding the timing and need for routine rooftop repair, maintenance, and replacement (both the costs of having to move the installation to allow repair or replacement and the lost revenues from power sales while the repair or replacement is going on); the possible need for structural improvements to support the solar PV array; the susceptibility of the solar PV array to high wind conditions and other climate factors where it is located; and the problems of changing ownership or occupancy of the structure during the term of the PPA. The project owner must recognize that these situations pose objective risks that may disrupt the production of electricity from the installation temporarily or permanently.

Because the typical owner of a distributed generation solar PV installation does not view itself as actually being in the business of power generation, the project owner will tend not to view these as ordinary course risks of doing business. Consequently, the project owner will want to allocate these risks among the parties in the best position to protect against their occurrence, or in the "fairest" position to bear the economic costs caused by their occurrence. Similarly, a site host that is not also the power purchaser will tend to not want to bear any of these costs that may be outside its normal costs and risks of doing business, such as providing for roof repair, maintenance, and replacement. On the other hand, a power purchaser that does not own the building or structure it is occupying is likely to view these as risks that it is not normally asked to assume as a "mere tenant." The fact remains that the project owner is making a significant financial investment that will depend on all of the various economic returns from the project, tax benefits, power sales revenues, and REC sales or other subsidies to make a reasonable return on its investment. No solar PV project is so economically "rich" that allocating these risks can be overlooked. To make sense of how the power sales aspect of a PPA interacts with these "other" concerns, it is first necessary to discuss how a typical PPA deals with the actual sale of output from the solar PV installation.

B. The Power Sales Aspect of the PPA.

1. **Standard "Take and Pay" Terms.** Most current distributed generation solar PV PPAs simply provide that the buyer will buy all of the electricity generated by the installation at the price specified in the PPA and the electricity will be delivered at the point of interconnection with the buyer's (or site host's) electric system ("behind the meter" delivery). In other words, the obligation to pay is based on the actual receipt of output at the specified point of delivery, and payment is determined by reference to the amount of output delivered. By contrast, a "take or pay" contract specifies a certain amount of money the purchaser is obligated to pay each year regardless of whether or not the installation actually produces output. Although such take or pay contracts are a common feature of the financing of large coal or natural gas fueled generation facilities, the distributed generation solar PV market has taken a different approach, reflecting the distributed generation nature of the assets and the fact that these installations, at least on the distributed generation scale, would probably not be acceptable to power purchasers that did not have some assurances regarding receiving value (output) for their money.

2. **Pricing the Take and Pay PPA.** There are many variations on how the electricity to be delivered is priced under a solar PV PPA. We have seen it priced at a discount to the current market rate with a moderate annual escalator. We have also seen it priced at the current market rate with a more substantial annual escalator, as well as being priced at a fixed rate based on current market rates or at a fixed rate that is initially over the current market rate with the expectation that the rate will cross under the then market rate at some forecast point during the term of the PPA. These examples certainly do not exhaust the potential options. One common element is a pricing constraint that reflects the current and forecast market price of electricity from the local serving utility over a time period equal to that of the PPA. In most situations, even though the power purchaser is motivated to obtain green power, there seems to be a real limit on how much over market the purchaser is willing to pay for this benefit.

It is unlikely these considerations will change significantly going forward. Even if regulatory actions, such as passage of a cap and trade bill by Congress, cause changes in the market rate of electricity, electricity from distributed generation solar PV installations will probably continue to be priced in reference to those (higher) market rates. Even if lower power rates from solar PV installations seem justified by continuing reductions in the all-in cost per installed watt, it is difficult to see the justification, absent pressure to submit a winning bid in a competitive process, for pricing solar PV electricity by a methodology that is intended to ensure that the cost remains substantially below market rates through the life of the PPA.

3. **Pricing Based on Output Levels.** There is debate about whether guaranteed output warranties should be expected to be a standard warranty offered by a solar panel manufacturer. From many power purchasers' points of view, they certainly should be offered because the power purchaser believes that it is paying a premium for obtaining green power, and the utility of that decision goes down dramatically if the power purchaser is not receiving the amount of the benefit (output) it thought it would when it decided to buy green power. Most project owners/sellers would probably agree with this point of view. However, giving an actual annual output warranty can expose the panel manufacturer to a substantial contingent liability that it is largely not in a position to mitigate. Will panel manufacturers continue to offer these actual output warranties? Only time will tell. However, this actual annual output concern can still influence the pricing structure of the PPA even in the absence of any manufacturer's warranty.

Some power purchasers will insist on a "guaranteed" level of annual deliveries from the project owner, even if the project owner has no manufacturer warranty backing its obligation. Typically these provisions will require a reduction in the price of power or a "make whole" payment from the project owner if actual deliveries drop below a specified percentage of the designated output of the installation during any year. The project owner takes a real risk in agreeing to such a provision. We understand from anecdotal information that weather patterns are subject to significant year-to-year variations, though over a longer three- or four-year period, they will average out to a "norm." Consequently, a project owner may pay penalties for a particularly bad year that cannot be made up from excess deliveries in another year, or cannot be recouped when the installation has produced at the required level over an averaged period of several years. How the project owner will mitigate this risk is usually not clear on the face of the PPA, but is definitely in the project owner's mind when the levels of output at which penalties will become payable is being negotiated. The fact that power purchasers want these types of assurances also influences how the panel manufacturer markets its products.

The typical PPA contains a provision stating that power generation will decrease annually by a fixed percentage, usually 1 or 2 percent, though again there is anecdotal evidence that many manufacturers actually expect panel output degradation to be substantially below this level. Similarly, and again from anecdotal information, many panel manufacturers understate the anticipated output from their panels. After all, if you might be held liable for the output of your product, it is more in your interest to understate expected performance than overstate it for a potential marketing advantage. The project owner will take this possible understatement of actual output capability and overstatement of degradation into account in specifying the size of the annual delivery deficiency that will trigger either a lower price or the payment of penalties. Viewed as a potentially necessary element of comfort to the power purchaser, the project owner should attempt to make certain that the threshold is set low enough that it is never triggered.

4. **Pricing Based on Net Metering Expectations.** Many power purchasers enter into solar PV PPAs with the expectation that any output that they do not use can be sold to the local utility. Net metering is one way in which the power purchaser expects that it can gain a financial benefit from any excess electricity delivered by the solar PV installation in excess of the power purchase's immediate need. Another is the

power purchaser's possible expectation that the power can be sold to the local utility by delivering it to the power purchaser's point of interconnection with the local utility's transmission grid ("at the meter" delivery).

The PPA itself will usually not have any provisions dealing with these situations because the typical solar PV installation is delivering behind the meter for the immediate use of the power purchaser without the requirement of any use of the local utility's grid for transmission. However, if the power purchaser has acted on these expectations without investigation in accepting the pricing structure of the PPA, the power purchaser may be in for a surprise. In many situations, a net-metering situation does not produce any actual revenue to the power purchaser (usually referred to as "monetizing" the excess electricity). Although excess electricity may be delivered to the local utility at the meter (resulting in the meter "running backwards"), there may be no obligation under federal or local law for the local utility to pay the power purchaser for those deliveries. For example, in Oregon, at the end of each year, the amount of credit built up by the power purchaser for such deliveries is applied by the local utility to the electricity bills of low-income customers. The delivering power purchaser does not receive any payment. In other states, deliveries to the local utility may trigger a regulatory requirement, though several states also seem to have provisions providing an exception for deliveries to local utilities to avoid this problem. In other words, both the project owner and the power purchaser should carefully investigate the local rules that will apply to any excess electricity delivered to the local utility's grid. There may be surprises for the unprepared.

Net metering and the limited circumstances in which a power purchaser may be able to sell its excess output back to the serving utility are discussed further in Chapter Five, Regulatory and Transmission-Related Issues.

II. Standard Provisions of a PPA.

A. Term of the PPA. The current standard appears to be that the PPA will have a length ("term") of 20 years, though 15 years is also common. To some extent, the term is dictated by the project owner's desire to receive, or need to receive, a certain rate of return from its investment. It is increasingly common, however, to see PPAs with terms significantly shorter than 15 or 20 years. This may arise, in part, from a desire by the power purchaser to "reprice" the PPA at certain intervals as a hedge against having agreed to an annual escalator that produces a price for electricity substantially above the future market price. This may also arise, in part, from a desire on the part of the project owner to be able to forecast future PPA prices at levels above what would be required under the initial contract to gain back some of the benefits flowing to the power purchase from unforeseen dramatic rises in the market rate of electricity. However, shorter-term PPAs rarely occur without the intervening effect of specific purchaser options provisions, which are discussed below. It is standard in solar PV PPAs that the project owner is responsible for paying the costs of removing the installation from the site upon the natural termination of the PPA. However, if termination occurs early due to an event of default caused by the power purchaser or a termination declared by the site host, this cost typically shifts to the party triggering the early termination.

B. Installation, Testing, and Start-up. Most PPAs contain an obligation on the part of the project owner to cause the project to be installed, set out the conditions relating to pre-operation testing, and define when the project will be considered "placed in service" (important for tax considerations and not requiring full actual operation) or in "commercial operation" (which relates to when the power sales provisions of the PPA become effective and usually requires that the project produce and deliver electricity at the designated standards set forth in the PPA). The project owner will usually satisfy its obligation to construct and install the project by entering into an installation agreement with an experienced solar installer. The installer will then undertake the obligations of testing the project, obtaining certification that the project has reached commercial operation, and completing the final punch-list items necessary to complete the installation contract. Pre-operation testing for a solar PV installation is usually quite simple: hook the system up for a period of at least four hours and meter the output to see if it is producing within design parameters. If it does, it has passed its required pre-commercial operation testing and will be considered placed in service. For more on installation agreements, see Chapter Four, Solar Energy System Design, Engineering, Construction, and Installation Agreements.

Developers and project owners should also keep in mind that an installation may be able to generate some level of output prior to completion of the installation as a whole if the installation is sized to utilize multiple inverters. As each inverter is coupled to "its" bank of panels, the power purchaser may be able to start receiving deliveries, although at a level substantially below designed capacity. PPAs for distributed generation projects are frequently silent regarding this "test period output" due to the relative very small amount of electricity being generated and the relatively short installation period for moderately sized commercial installations. Depending upon the specific circumstances of a particular installation, there may be some benefit to considering a test period output provision pricing these deliveries prior to the actual placed in service date of the full installation.

C. Project Operation and Maintenance ("O&M"). The solar PV PPA typically will also provide that it is the project owner's responsibility to maintain the installation. Several standards are usually specified, such as accordance with prudent utility practice, prudent solar industry practice, or best practices, but they all mean essentially the same thing. The installation will be maintained so that it does not pose a danger to individuals or the structure on which it is located and will produce electricity at the highest level possible. The project owner will also fulfill this obligation by subcontracting the O&M contract. Many installation contractors will also want to be awarded the O&M contract and will make a longer term for their equipment and installation warranty (two or three years, increasing to five or 10 years), depending on their handling of the O&M.

D. Project Purchase Options. An option for the power purchaser or site host to purchase the solar PV installation at some defined point during the term of the PPA is a common feature of solar PV PPAs. As with the pricing structure, the times at which this purchase option may be exercised varies widely.

1. Purchase Option Points During the PPA Term. Project owners that view themselves as being in the power generation business may want to delay this point as long as possible, typically to the end of the initial term of the PPA. A project owner that views itself as being in the power generation business will typically want a 20-year PPA term, though some shorter period may be negotiable. Also common is a purchase option exercisable at the 10th or 15th year or on the natural expiration of the PPA. Some power purchasers that are also site hosts want the purchase option to be exercisable at any time. Granting such a purchase option presents significant issues for the project owner/seller, which are discussed below.

2. Pricing the Purchase Option. A project owner considering granting a purchase option is faced with a combination of tax considerations and economic business considerations. These considerations will influence the points during the term of the PPA at which a project owner will be willing to grant a purchase option exercise right. For example, the federal Energy Credit has a five-year recapture; any exercise of a purchase option during the first five years of the PPA will trigger recapture of a percentage of the federal Energy Credit received by the project owner. (This is also the result if a cash grant in lieu of the federal investment tax credit is received.) An exercise of a purchase option before the owner has realized its expected return will not be acceptable to the owner. This issue is frequently dealt with by providing a termination fee in the PPA, which is payable upon exercise of the purchase option before the full term of the PPA. The termination fee can be structured to take into account certain items that the project owner believes should be realized under the PPA. In addition to being payable upon exercise of an early purchase option, the termination fee also has application to other situations, such as a breach and event of default caused by the power purchaser or site host. In addition, we have seen PPAs that provide for a defined purchase price payable upon exercise of the purchase option. This purchase price is separate from the termination fee. As the term of the PPA runs down and the termination fee gets smaller, the project owner is still assured of receiving at least the purchase price upon exercise of the purchase option. The IRS standard is that any purchase option must be for not less than the fair market value of the project at the time the purchase option is exercised.

E. Off-Ramps Before Construction, Events of Default, and Other Common Provisions. See Chapter Three, Power Purchase Agreements: Utility-Scale Projects for a discussion of standard event of default provisions that are generally applicable to both distributed generation solar PV PPAs and utility-scale PPAs, other than those dealing with the creditworthiness of guaranties and other financial accommodations, which typically are not found in distributed generation solar PV project documentation.

III. On-site Issues in a Distributed Generation Solar PV PPA. Several issues arise from the on-site location of distributed generation installations that are relatively unique to these types of electric generation projects. They will be encountered in any distributed generation facility regardless of technology, but the large increase in the installation of distributed generation solar PV facilities makes them an excellent template for discussing these issues.

A. Structural Integrity. Installing a solar PV installation on the rooftop of an existing structure will put a significant weight load onto a structure that may not be rated for that weight. Placing a solar PV installation on a structure that cannot easily bear the weight is a clear danger to health and safety, and poses a potential threat of damage to the structure itself. A careful survey of the weight-bearing load capacity of any building on which a solar PV installation will be placed should be done before going very far into the negotiation process. Structural reinforcement may be required, and the costs of those improvements may prevent the installation from being economically viable. The only option other than making structural improvements may be downsizing the proposed installation so it weighs less. The site host, power purchaser, and project owner each have a direct and clear interest in being certain the structure on which the installation will be placed can bear the load for at least the full term of the PPA. In addition, upgrades to the structure's electric system may be necessary for it to handle the delivery of output from the solar PV installation.

B. Repairs and Replacement. Almost every roof will require maintenance and repairs at some point or points during the term of the PPA. In addition, most roof coatings are designed with a known useful life. Exceeding the useful life of the existing roof may require the solar installation to be moved or removed from the rooftop to allow repair or replacement of the existing roof. There is a direct economic cost to either disconnecting the installation and moving it out of the way on the rooftop or disconnecting the installation and moving it off the rooftop while repair or replacement is conducted. That economic cost is the loss of power sales during the period the installation is out of service, as well as the loss of any REC sales or other subsidies that depend on the installation being in production. Most project owners will grant the power purchaser or site host some agreed period of time each year in which there will be no penalties incurred to accommodate ordinary repairs and maintenance. Usually this will not exceed seven calendar days total during each year. If the installation downtime will exceed this agreed-on period, many PPAs will require that the power purchaser start reimbursing the project owner for lost power sales, lost REC sales, and other lost economic benefits. If the power purchaser is not the site host, this presents a clear need to coordinate the PPA and the site lease, license, or easement to handle this risk.

C. **Sale of the Structure or a Change of Tenant.** Distributed generation installations also present the unique problem that ownership of the structure on which the installation is located may change during the term of the PPA, or the tenant that was previously the power purchaser may move out and a new tenant that is not interested in assuming the PPA may move in. There is no single, clear, simple solution to this problem. Typically, the site lease, license, or easement will require that any purchaser of the structure assume the site lease, license, or easement. However, if the existing owner is not motivated enough, it may not be willing to impose this requirement on an unwilling buyer. Similarly, the site host may want to require a new tenant to assume the PPA, but if the new tenant is unwilling and has sufficient leverage with the site host, that may not happen. Consequently, even if the project owner believes it is adequately protected from these situations under the project documents, the project owner is faced with a difficult decision. There is a substantial cost attached to the project owner enforcing its legal rights, as well as immediate lost revenues of various types if the new owner or tenant simply will not accept the delivery of electricity from the solar PV installation. Many PPAs appear to ignore this risk as being too complicated to deal with when everyone wants green power at the time the installation is being negotiated. Other PPAs attempt to anticipate this situation by providing the parties a middle ground. If the installation has to be removed, whichever is liable for damages—the site host or the power purchaser—can limit and mitigate its damages by helping the project owner find a new site for the installation. To further motivate the site host or power purchaser to assist the project owner, the PPA also frequently provides that successful relocation will result in a decrease in damages for being forced to move the installation. Instead of damages being the cost of removal and all lost revenues for the remaining term of the PPA, they are limited to the cost of removal and relocation together with the differential between any lower price the project owner has to accept for power sales and the power sales price under the PPA.

D. **Ground-Mount On-Site Issues.** A ground-mount installation obviously presents a smaller range of issues than a rooftop installation. Typically a ground-mount installation is located on a piece of land that was not being used for any significant purpose before the installation. In addition, ground-mount installations do not require a substantial disturbance to the subsurface area of the site. For this reason, it is often proposed that placing solar PV installations on areas that are otherwise considered unusable, such as covered garbage dumps, sanitary landfills, or hazardous substance sites, would be an excellent way to reclaim such sites. Anyone considering this option should clearly understand that the project owner will have absolutely no interest in potentially becoming involved with environmental lawsuits or claims relating to the site. A solar PV installation usually does not involve any substances legally defined as hazardous either during the construction and installation phases or during normal operation, and normal installation does not disturb the soil to the extent it raises a risk of exacerbating any existing contaminated condition. Consequently, the project owner will rightly refuse to take any risk regarding existing contaminants and contamination at the site. The site host will need to understand that the project owner will be seeking full protection through full indemnification for existing conditions and any disbursement of existing conditions to surrounding properties from a creditworthy party, a strong hold-harmless covenant, or some other means of assuring that the project owner will not (or cannot) be pulled into remediation efforts or lawsuits relating to the contaminated conditions.

IV. Hybrid PPAs. Certain utilities, notably Southern California Edison Company ("SCE"), have received authority to enter into PPAs with distributed generation solar installations that are not owned by the utility or located on utility property. The standard form of PPA used for the SCE program combines provisions typical to distributed general solar PPAs with some provisions typically only used in utility-scale solar PPAs, although in a more limited form than usual for a utility-scale PPA. For example, a security deposit calculated at a fixed dollar amount per kilowatt that will be held by the utility is required. This deposit is returned if the installation is completed in full by the defined starting date for power sales. If the developer fails to install any of the equipment or devices required to provide output at the designated gross power rating for the installation under the PPA by the defined starting date for power sales, the entire deposit is forfeited to the utility. If only a portion of the designated gross power rating of electricity is delivered by the defined starting date for power sales, a portion of the security deposit is forfeited. This type of security deposit is common in utility-scale PPAs but is relative uncommon in distributed generation PPAs. Due to the character of the power purchaser as a regulated public utility, regulatory approval of the PPA is required and the power seller is required to operate the installation in compliance with certain regulatory tariffs, each provisions common to utility-scale PPAs but uncommon for typical distributed generation PPAs. In addition, these hybrid PPAs are silent on the issues that typically must be dealt with between the developer/project owner and the site host discussed above. The developer/project owner must solve these on its own, and the purchaser utility has no role or interest in those issues. However, the purchasing utility does have a buyout option similar to those typically found in distributed generation PPAs.

V. Conclusion. The project owner must carefully consider how to integrate the on-site issues presented by a distributed generation solar PV installation with the basic purpose of the PPA, which is to cover the project owner's agreements with the power purchaser regarding the installation, start-up, maintenance, and sale of output from the installation. Any situation in which the PPA will be with a party other than the site host will raise the question of whether these on-site-specific provisions should be in the site lease, the PPA, or a combination of the two documents, depending on what the project owner is able to negotiate with the site host and the power purchaser.

Simply ignoring these issues is an option for the project owner, but one that needs to be taken knowingly. Failing to address these issues or being unable to satisfactorily address them during negotiations does represent a significant assumption of risk by the project owner.

As to the basic core terms of the PPA, the discussion above indicates that there are many different approaches to each provision being used in the market. At this point, there is no single set of deal points that is generally accepted as the industry standard. There are many different ways the market may react to the relatively large up-front costs and time involved in putting together a solar PV deal. One response will be an increasing trend among developers to offer a one-stop shopping alternative that is intended to allow power purchasers to just "flip the switch" as they do when acquiring service from their local utility. This approach is likely to involve the developer/project owner having a prepared set of documents that it will present as part of a total package. This approach may work when the site host and the power purchaser are the same entity, and there are no special on-site issues or considerations. However, even if the use of fully prepackaged deals and documents increases, there will still be many different options available to address specific issues encountered by the project owner, power purchaser, or site host that wants something more responsive to its own situation. As in every other area, no matter how much the participants want to be able to use a cookie-cutter approach, very few cookie-cutter deals are ever done successfully.

Chapter Three
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Power Purchase Agreements: Utility-Scale Projects—

Morten Lund, William H. Holmes, Stephen Hall, Jennifer Martin

I. The Basics. In response to state mandated renewable portfolio standards ("RPS") utilities have been issuing requests for proposals ("RFPs") for a number of solar generation installations in the 100 MW and larger range. Many of these proposals and bilateral negotiations have resulted in the highly publicized execution of power purchase agreements ("PPAs") between the power purchaser utility and its selected third-party developer. Although most of these projects are currently in the environmental, regulatory, and interconnection agreement phases of pre-development, the number of signed PPAs that have been publicly announced and the number of RFPs that are outstanding indicate that utility-scale solar generation is becoming a viable part of the renewable energy market space. This is a different situation from what existed as recently as early 2008. The acceptable technology for these larger solar installations is varied. Some are concentrated solar thermal using reflected solar energy to heat a medium that drives a steam turbine generation unit and some are pure solar photovoltaic ("PV"). In addition, there are a variety of approaches being utilized within each of these broader technological alternatives, including concentrated PV technologies. However, some of the naming difficulties relating to just exactly what size of projected output constitutes "utility scale" remains. Should its use be restricted to installations of 100 MW or larger? Should it be applied to smaller but still significant installations of greater than 1 MW? Should it be applied to any installation that is not a "behind the meter" distributed generation installation? Rather than try to resolve this confusion in terminology, we will simply use the term "utility scale" to mean any installation that is intended to sell its output to a utility customer (a sale for resale) rather than a direct end user (essentially, a retail sale) of such output.

A. The Parties.

1. **The Seller.** The seller will usually be the developer of a solar facility that will generate energy ("output") and environmental attributes ("RECs"). In a tax equity financed project, the developer will sell a substantial interest in the installation to an investor or utility before the installation being placed in service so that the developer can use the funds paid by the investor or the federal investment tax credits, federal accelerated depreciation and any available state level tax benefits to recoup all or a portion of its development costs. The current availability of a cash grant in lieu of federal investment tax credits changes this calculation somewhat, and adds the complication of attempting to sell the rights to accelerated depreciation and state level tax benefits without any accompanying federal investment tax credit. As the market for tax credits has shrunk substantially over the past 12 months, it appears that more projects are looking at using debt financing as a critical component of the financing package. RECs continue to be a significant potential revenue stream for utility-scale projects. Many utilities purchasing the output of a facility want the RECs to be included as part of the purchase. This presents the developer with the opportunity to price RECs into a package that may have a higher price than the electricity sale alone. However, each PPA, whether for electricity alone or electricity combined with RECs, is going to be an individually negotiated contract between the seller and the purchaser. In addition, regulatory issues such as whether a specific utility has any remaining authority to enter into above market rate PPAs is going to have to be included in the seller's calculation of project viability.

2. **The Buyer.** The buyer will typically be a utility that will purchase the solar power project's output to serve its load, with or without RECs included. The utility will likely be motivated by a state level RPS or other regulatory policy that encourages the development of solar power and other forms of renewable energy. In a state that permits direct access, it is possible that one or more of the buyers could be a retail purchaser, such as a manufacturing facility that wishes to hold itself out as a green company, even though the solar facility is not located on the customer's premises. In states or geographic areas within a state that do not allow direct access, a utility-scale project developer is unlikely to be dealing with a universe of potential purchasers outside of regulated public utilities or governmental utilities.

3. **Credit Support Provider.** The developer of a utility-scale facility will require access to a substantial amount of capital that will not be available for application to direct project costs. This capital, either in the form of cash, a letter of credit, or a guarantee from an entity deemed sufficiently creditworthy, will be needed to fund the security deposits typically required in a utility-scale PPA. The utility buyer will want this security to provide a source of damages in the event the installation experiences unexcused delays in construction, produces output in a lesser amount than contemplated by the PPA or otherwise experiences problems during construction. After the installation goes into commercial operation, the utility purchaser will want some portion or all of this security deposit maintained as a source of payment for any cover or other damages caused by the utility's need to make market purchases to cover any shortfalls in delivery from the installation. Consequently, a utility-scale project developer is likely to have a substantial amount or cash or other financial resources tied up in a relatively unproductive manner for the term of the PPA. The ability to obtain and provide this security to the utility power purchaser is a fundamental element of most utility-scale PPAs.

B. **Regulatory Concerns.** The regulatory issues arising from a utility-scale solar installation are complex and detailed. Rather than attempt to summarize such issues in this general background article, we will simply note that any developer or owner interested in a utility-scale solar project should make a point of contacting experienced utility regulatory counsel early in the process. Regulatory proceedings frequently take more time than the parties anticipate, and development schedules need to take these time and cost factors into account.

II. Typical Terms of a Utility-Scale PPA.

A. **Project Financing.** If the solar power facility is financed with limited recourse financing, the term of the PPA should be sufficient to amortize the project debt. Capital costs per megawatt hour ("MWh") of energy produced may be relatively high for solar power facilities as opposed to facilities that can be operated at will or during longer peak periods because they produce energy only when there is sunlight. To produce the revenues needed to amortize the project debt, the term of the PPA for large projects usually must be in the range of 20 years.

If the term of the PPA is 20 years, lenders will generally be willing to amortize the debt over a 15- to 17-year period. In utility-scale project financings, the debt amortization period generally needs to be shorter than the PPA term to allow work-out time in case the project encounters financial difficulties in later years. Generally, only the base term of the PPA is taken into account because the lender has no assurance that the purchaser will elect to continue the PPA into a renewal term.

B. Useful Life. Because the purchaser under a utility-scale PPA effectively pays for the entire capital cost of the project (plus a profit to the owner), the purchaser of electricity from a large project may want the PPA to capture the entire value of the project by covering the entire economic life of the facilities. In that case, the PPA term may have a base term with one or more extension options. Because the entire capital cost of the solar power facility generally will be amortized over the base term of the PPA, it is possible to eliminate the cost elements that relate to the project debt from the power price during the renewal terms, making it less than the power price during the base term. The project owner thus preserves its return on the project but does not get a windfall return during the renewal terms.

C. Effective Date. A utility-scale PPA will be binding on the date it is signed (the "effective date"). This ensures that the purchaser will buy the output once the project is built and that the project owner will build the project and not sell its output to anyone other than the purchaser.

D. Commercial Operation Date. The term of the utility-scale PPA usually begins on the effective date, but the length of the term is often defined by reference to a "commercial operation date." For example, the term might end on the 20th anniversary of the January 1 next following the commercial operation date. Thus if the term were 20 years and commercial operation began on November 1, 2009, the term would end on January 1, 2030. In distributed generation solar PPAs, the term frequently begins on the commercial operation date and extends for a specified number of years.

"Commercial operation date" can be defined as the date on which all solar energy generation equipment and all other portions of the project necessary to put it into operation have been tested and commissioned and are both legally authorized and able to operate and deliver energy to the transmission system in accordance with prudent utility practices. In the case of a distributed generation installation that will not be utilizing significant interconnection and transmission, the commercial operation date can effectively be the date on which the installation is "finished" except for relatively minor punch-list items. A different approach to defining the commercial operation date may be appropriate with a utility-scale project.

"Commercial operation date" can be defined in a manner that allows the project owner to achieve commercial operation for one or more portions of the installation even if it has not installed all of the solar energy generation equipment called for by the PPA. For example, the PPA may call for an installed capacity of 15 MW, but the commercial operation date may occur as each 3 MW or 5 MW of capacity have achieved commercial operation (*i.e.,* when each designated portion of the project has been "substantially completed"). Consequently, if the necessary interconnection and transmission is installed before the full capacity of the project is completed, it is possible to have multiple commercial operation dates. This raises several potential issues between the developer or project owner and the power purchaser. For example, if the power purchaser wants only a single commercial operation date for the PPA, there may be output available from the project before that date. In some instances, this may be designated as "test period production," which can be sold to the power purchaser at a price different from the stipulated contract price under the PPA. However, due to the timing of when tax benefits from a solar project become available, in a tax equity financing structure the developer or project owner may want to have the project reach sequential commercial operation dates faster, making the tax credit and benefits available earlier in the tax year, which potentially increases their value.

E. Termination Before the Commercial Operation Date. Both distributed generation and utility-scale PPAs usually include "off-ramp" provisions that enable one or both of the parties to terminate the PPA if certain events occur or fail to occur. Although the exact list of designated off-ramps will differ between distributed generation and utility-scale projects, common reasons for early termination of a utility-scale PPA may include (1) failure of a public utility commission to approve a PPA if the buyer is a regulated public utility; (2) inability to obtain an interconnection agreement or needed transmission rights; (3) inability to obtain leases, rights-of-way, or other land rights required to build the project; (4) inability to obtain permits required to build or operate the project; (5) inability to obtain an authorization to sell power at market-based rates; (6) failure of the project to reach a certain minimum size by a certain date; (7) failure of the project to achieve commercial operation by a certain date; and (8) inability to obtain certain subsidies and REC sales necessary to enhance the economic viability of the project. Termination rights require careful negotiation to make sure that all possibilities have been considered. A party is usually required to use diligent or reasonable efforts to satisfy the conditions set forth in the PPA before it can invoke the failure to satisfy such a condition as a reason to terminate the PPA (*e.g.,* the seller could not assert the inability to obtain a permit as a basis for terminating the PPA unless the seller had used diligent efforts to obtain the permit).

III. Purchase and Sale of Electricity.

A. Delivery Point and Transmission Provider Rules. The PPA will require the sale of energy to occur at a specified delivery point. For larger-scale projects, if the energy is to be delivered from the installation in a "busbar" sale, the delivery point will usually be the high side of the transformer at the project's substation. In a busbar transaction, the buyer provides the transmission required to transmit the energy from the plant to the point where the buyer intends to use it (or to deliver it to another party in a resale transaction). The PPA may also require the seller to deliver energy to a specific point some distance from the plant, in which case the seller will be responsible for securing the required transmission to the delivery point, and the buyer will be responsible for obtaining the transmission required to take the energy from the delivery point. Transmission ancillary services can be fairly costly and should be specifically allocated in the agreement. Title and risk of loss pass from seller to buyer at the delivery point. Utility-scale PPAs will typically include provisions dealing with the need to comply with the rules and regulations of the transmission provider, and to respond to curtailment and other requirements of the transmission provider, which may adversely affect the delivery of electricity from the facility. These are complex rules and should be specifically discussed by the developer with its attorney due to geographic variations in these rules and regulations.

B. Pricing of Electricity.

1. **Contract Rate.** Price is usually the most important part of the PPA. The price may be flat, escalate over time, or contain other features. An escalating price is often tied to a "contract year" that begins at a specified point after the commercial operation date is achieved, thus encouraging the seller to lock in the initial price and the escalation rate by achieving commercial operation as soon as possible.

2. **Test Energy Rate.** Because a solar energy facility may have some generating facilities come online in stages, the PPA may require the purchaser to buy power from the solar energy facilities as they are installed, connected, and made operational, even though the project as a whole has not achieved its commercial operation date. To encourage the seller to achieve commercial operation as soon as possible, such energy might be

sold at a test energy rate, which is often lower than the contract rate that will be paid once the commercial operation date is reached.

3. **Excess Rate.** A PPA often requires the seller to specify how many MWh the plant is expected to produce each year. This output estimate may form the basis of an output guaranty or a mechanical availability guaranty. To encourage the seller to make an accurate estimate of expected output, the seller may be paid less than the contract rate for each MWh of energy in excess of, for example, 110 percent of the estimated annual output. Because utility-scale PPAs factor in a number of considerations other than the straightforward "we produce it, you buy it" structure of a distributed generation solar PV PPA, output estimates and benchmarks are likely to play a larger role in the negotiation and pricing of a utility-scale solar PPA.

C. **Environmental Attributes.** Environmental attributes are credits, benefits, emissions reductions, environmental air-quality credits and emissions-reduction credits, offsets, and allowances resulting from the avoidance of emission of a gas, chemical, or other substance that would otherwise have resulted from generation of an equivalent amount of energy from a nonrenewable source. These environmental attributes will attach and be available to the solar power project during the term of the PPA, together with the right to report those credits. Environmental attributes are sometimes called "green tags," "green tag reporting rights," or "renewable-energy credits." The PPA usually makes clear that tax credits and any solar power financial incentives (such as rebates or grants) are not part of the environmental attributes, and thus are not being conveyed to the purchaser.

The PPA should clearly state whether energy is being sold with or without the environmental attributes. If environmental attributes are being sold, the seller will usually warrant title to the attributes but will not warrant the current or future use, character, or value of the attributes, or whether and to what extent they will be recognized by law. In effect, the purchaser assumes the risk that the law or the market might change in a way that reduces the value of the environmental attributes.

D. **Allocation of Taxes and Other Charges.** The PPA should specify who pays any sales, excise, or other taxes arising from the transaction. Although most states do not tax wholesale energy sales, the parties may wish to consider allocating tax liability resulting from future legislation.

IV. Permitting and Development.

A. **Commitment to Develop.** The PPA will make the project owner responsible for developing and constructing the project. The seller usually prefers a PPA that requires it to sell the project's output only if the project is actually built. A buyer tends to view such a PPA as a put and will usually insist that the seller commit in some fashion to develop the project, including the making of certain security deposits as described above. Many tense negotiations revolve around what the seller will or will not be required to do to develop the project, as well as off-ramps each party has if the project does not achieve certain stated milestones.

B. **Status Reports.** The buyer is typically interested in ensuring development of the utility-scale project because it needs to know when the energy will be delivered onto its system or when it will need to take a hedge position to cover the renewable source electricity it may not be receiving from this particular project. As a result, the PPA usually requires the seller to deliver regular reports to the buyer about the status of permitting and construction.

C. Milestones and Delay Damages. The PPA for a utility-scale project is very likely to include a schedule of certain project milestones (*e.g.,* the date by which the seller must secure project financing, the date by which the solar energy technology must be ordered, the date by which all permits and the interconnection agreement must be in place, and the commercial operation date). If the seller fails to achieve a milestone, the buyer may have a right to terminate the PPA, collect delay damages, or require the seller to post additional credit support. The seller will therefore want to limit the number of milestones and bargain for some flexibility, especially in cases in which a delay in achieving an interim milestone is not likely to delay a project's completion date. Sellers sometimes prefer PPAs that provide that the buyer's only remedy if the seller fails to meet a project milestone is to terminate the PPA without recovering damages. Buyers are concerned that this gives the seller a right that resembles a put and strongly prefer to require the seller to suffer some consequences if project milestones are missed. Hence, again, the security deposits described above. Many interesting negotiations revolve around off-ramps the seller will have versus damages it will pay to the buyer if it fails to build the project in accordance with the PPA. A common middle ground is for the seller to agree to pay delay damages up to an agreed-on cap, which defines the limits of the seller's exposure if the project is not built but gives the seller an incentive to use diligent efforts to finish the project on time.

V. Interconnection and Transmission. The PPA usually requires the seller to bear the cost of interconnection (including any network upgrades required by the new project) and all costs of transmitting the energy to the delivery point. If the seller is the project owner (as opposed to a marketer), it will also be responsible for negotiating the interconnection agreement with the transmission provider. However, different requirements, dictated by the interconnecting utility's rules and applicable state law, may apply. The buyer will be responsible for arranging and paying for transmission from the delivery point to the buyer's ultimate point of integration into the buyer's distribution system. (For further reading on interconnection and transmission-related issues, see Chapter Five, Regulatory and Transmission-Related Issues.)

VI. Performance Incentives. A seller of output from a utility-scale solar project will usually prefer to enter into an "as-delivered" PPA. This means the seller is obligated to deliver only what the project actually produces. A buyer under a utility-scale PPA, however, will often require the seller to warrant or guaranty that the project will meet certain performance standards. Such guaranties usually enable the buyer to recover all or part of its incremental cost of purchasing replacement power in the market to the extent that the project fails to perform as expected. Performance guaranties enable the buyer to plan around the facility's expected output and strongly encourage the seller to maintain a reliable and productive project. Of course, even without performance guaranties, the PPA should address the consequences of the buyer causing or allowing shading of the solar power facilities, as well as other events that might give rise to the need to relocate the facilities to maintain the expected level of output. It can be anticipated that the siting of a utility-scale solar installation will pay far more attention to these shading and interference issues in the early design phases than is usually found in distributed generation installation in which the siting options may be more limited.

A. Output Guaranties. As mentioned above, in a larger utility-scale project, the PPA may include an output guaranty to the buyer. An output guaranty requires the seller to pay the buyer if the project's output over a specified period fails to meet a specified level. The period may be biannual, annual, or seasonal. The PPA usually allows the owner to operate the project for one or two years before the output test is applied, enabling the owner to fix any problems with the project. The owner should offer such a guaranty only if very confident about any meteorological data relied on, equipment reliability, and capacity factor. In particular, the seller should do the research necessary to determine whether the site is likely to encounter significant year-to-year variations in solar access, or whether the pattern will tend to average to a particular level over a historically significant period of years.

Although some solar panel manufacturers have offered output warranties in the past, it is uncertain whether this will continue and if it does, for how long and for what coverage periods. The more common warranty is an "availability warranty," as discussed below. The concentrated solar market, which does not use solar panels to generate electricity, will require a different analysis. The installation contractor is expected to provide or obtain for pass-through equipment warranties on items such as wiring, racking, or step-up transformers, and the other equipment necessary for the installation. In the case of solar PV distributed generation systems, the solar panel manufacturer and the inverter manufacturer are expected to provide separate reliability warranties on their equipment, which the installation contractor may be responsible for administering as part of its overall installation reliability warranty. In some instances, the installation contractor will request that the project developer separately purchase these items so that these warranties run directly to and are administered by the project developer. Outside of instances in which the panel manufacturer may warranty output at a specific level, the project owner will be expected to assume the risk that weather and other climate conditions at the project will produce enough energy to meet the project's revenue and performance requirements.

B. Availability Guaranties. The owner of a solar power facility may be more willing to offer the purchaser a mechanical availability guaranty than an output guaranty. Such an availability guaranty requires the solar power technology in the project to be available a certain percentage of the time, after excluding hours lost to force majeure and a certain amount of scheduled maintenance. Mechanical availability percentages may decline over the life of the project to reflect degradation. Due to the relatively new status of utility-scale concentrated solar projects, there remains some fair question as to what the actual degradation experience of these projects will prove to be, even with proper and regular maintenance.

Solar power technology manufacturers may provide availability warranties that support the project owner's mechanical availability guaranties for the first few years of the project. Such warranties may last only a few years. Thus the seller will be on its own if it chooses to give a mechanical availability guaranty that covers the period after a manufacturer's warranty expires.

C. Power Curve Warranties. The seller might also ask the solar power technology manufacturer to warrant the ability of the power technology to produce a specified output at specified levels of sunlight. This is different from warranting that an actual level of output will be produced. Instead, it is a warranty that it is "possible to" produce at certain specified levels given the sun's cooperation. The power curve represents a calculation of the amount of energy that the solar power technology is rated to produce at different conditions. Power curve warranties are intended to compensate the project owner for lost revenues resulting from inefficient technology operation, *i.e.,* the failure of solar power technology to operate within a certain percentage of the power curve. Power curve warranties are not typically passed through to buyers under PPAs. Instead, the funds received under such a warranty may be used by the seller to pay damages required to be paid to the buyer under an output guarantee. In the absence of such a guarantee the seller will keep these payments to offset reduced revenues from actual power sales.

D. Liquidated Damages. If the utility-scale PPA includes one or more of the guaranties discussed above, the PPA usually provides a mechanism for determining the damages suffered by the buyer if the benchmarks set forth in the guaranty are not met. First, the parties determine the relevant shortfall (for example, if in output, the shortfall as stated in MWh) relative to the performance that was guarantied. Second, the shortfall will usually be multiplied by a price (per MWh or otherwise) determined by reference to an agreed-on index to arrive at a monetary value of required compensation. Because market indexes cover only power prices and do not include the value of environmental attributes, the PPA may include an adjustment to account for the assumed value of the environmental attributes or may use a firm price index as a proxy for the value of the energy plus the environmental attributes. The amount of liquidated damages is usually determined once per year. The seller would pay the liquidated damages to the buyer or credit the damages against amounts owed by the buyer under the PPA. The seller may also seek to cap liquidated damages on an annual or aggregate basis to mitigate its financial risk of providing these guaranties.

E. Termination Rights. To protect against chronic problems at an unreliable utility-scale solar power facility, the PPA usually allows the buyer to terminate the PPA if the output or mechanical availability of the project is below a stated minimum for a certain number of years. Although this termination right may be present in a distributed generation solar PV PPA, it is less common.

VII. Curtailment and Force Majeure.

A. Curtailment. Both utility-scale and distributed generation PPAs often describe circumstances in which either party has a right to either curtail output or refuse to accept deliveries, as appropriate. For example, the seller may have a right to curtail output if the plant is affected by an emergency condition. The PPA may permit the buyer to curtail accepting deliveries for convenience or due to immediate threats to safety or the integrity of the site location, in which case the PPA usually requires the buyer to pay the purchase price for the curtailed generation and the after-tax value of any subsidy or REC revenues that may be lost due to the curtailment. In a utility-scale PPA, facility curtailments caused by transmission congestion or conditions beyond the point of delivery are often handled in the same manner, though the topic of curtailment is frequently a difficult issue in utility-scale PPA negotiations.

B. Force Majeure. If energy is curtailed at a party's discretion or because the party is at fault, the PPA usually requires the curtailing party to pay damages to the other. If curtailment is caused by an event beyond a party's control, the party's duty to perform under the PPA may be excused. For example, if a disaster disables the transformer at the delivery point, the seller would be excused from delivering energy, and the buyer would be excused from taking and paying for energy, until the transformer is repaired. The party responsible for maintaining the transformer would, of course, be required to use diligent efforts to make repairs.

Parties often heavily negotiate force majeure provisions. Good provisions should carefully distinguish between events that constitute excuses (which relieve the affected party from its duty to perform) and those that are risks (which are simply allocated to a party). The ability to buy energy and environmental attributes at a lower price or sell them at a higher price is generally not a force majeure event. Moreover, a party's inability to pay should not constitute a force majeure event under the PPA. A well-drafted force majeure clause will usually list a number of items that both parties agree are force majeure events, as well as items that the parties agree are *not* force majeure events.

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VIII. Operation and Metering.

A. Operation and Maintenance. The PPA generally outlines the seller's responsibility to operate and maintain the project in accordance with prudent operating practices. Such duties typically include regular inspection and repair, as well as completion of scheduled maintenance. If the project is located on the buyer's premises, the PPA should provide for access to and security of the project. In larger-scale projects, operation and maintenance is more likely to be carried out by employees or affiliates of the project developer than to be subcontracted out. This is a point that also distinguishes larger utility-scale solar generation projects from smaller distributed generation projects, and that usually has a direct interaction with the types of warranties the project developer will seek from the installation contractor.

B. Metering. The metering provision is one of the most important in the PPA because it is used to determine the quantity of output for which the seller will be paid. The PPA usually requires one party (typically the seller) to install and maintain a meter. The other party typically has the right to install a check meter. If the seller's meter is out of service or generating inaccurate readings, the PPA should specify how the parties will determine the project's output. Tests should be conducted regularly to verify accuracy of the seller's meters. The PPA usually states how often such tests will occur, at whose expense, and what form of notice will be given to each party. The PPA should specify how much variance in the meter's accuracy will be permitted and how repair or replacement of defective meters will be handled. A utility-scale PPA or a distributed generation PPA with a utility may require the seller to provide the buyer with real-time output data, which will significantly increase the cost of the metering equipment required to be provided by the seller.

IX. Billing and Payment.

A. Billing and Payment. The PPA typically determines how invoices are prepared, when they are issued, and how quickly they are paid. The billing provision often states that an invoice is final if not challenged within a period of time. The PPA usually sets forth procedures for raising and resolving billing disputes, and the interest rate and penalties that apply to late payments.

B. Right to Audit. The buyer will typically have the right, on reasonable notice, to access those records of the seller necessary to audit the reports and data that the seller is required to provide to the buyer under the PPA.

X. Defaults and Remedies. The PPA will usually list events that constitute defaults. These may include:

- failure by any party to pay an amount when due;
- other types of material defaults, such as the seller's failure to use commercially reasonable efforts to achieve a material project milestone;
- the bankruptcy, reorganization, liquidation, or other similar proceeding of any party; and
- a material default by a party's guarantor.

The default clause should specify how long the defaulting party has to cure a default. If the default is not cured within the agreed-on period, the nondefaulting party usually has the right to terminate the agreement and pursue its remedies at law or in equity, to suspend performance of its obligations, or to seek specific performance and injunctive relief. The remedies clause may also limit remedies or place a cap on a party's damages—for example, in some PPAs, the buyer's only remedy for the seller's failure to achieve a given milestone is to terminate the PPA without seeking damages.

XI. Project Lenders and Equity Investors. Even if the project is expected to be financed off a developer's balance sheet, the terms of the PPA will usually take into account the possibility that the PPA will be assigned to a lender as collateral for project debt. The PPA will therefore contain provisions authorizing the seller to assign the PPA as collateral, requiring the buyer to provide consents, estoppels, or other documents needed in connection with financing, and giving the lender various protections (including additional time to cure defaults). The PPA may also include provisions to address the concerns of future equity investors (especially, if available, tax equity).

XII. Boilerplate and Examples. The PPA will also address boilerplate matters, such as confidentiality, representations and warranties, the right to pledge the PPA to project lenders, governing law, the limitation of consequential damages, dispute resolution, consent to jurisdiction, and waiver of jury trials. If the transaction between the parties involves complex calculations, the PPA should also include a number of carefully considered examples that illustrate how those calculations will work in certain scenarios.

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Chapter Four
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Solar Energy System Design, Engineering, Construction, and Installation Agreements—

Alan R. Merkle, Karl F. Oles

This chapter provides an overview of the contractual structures commonly applied to the construction and installation of distributed generation, on-site, solar energy projects, including design and engineering, procurement and installation of solar collection equipment, and construction of ancillary facilities.

This overview is written from the perspective of a solar energy project owner/developer; however, the information herein should interest design and engineering, construction, operations and maintenance, and financing entities as well. As with any complex negotiated transaction, there is significant value to be won or lost by all parties and the potential for creative legal strategies to enhance value for all parties.

I. Construction-Related Agreements. Critical to the development of any solar energy project are the various agreements a project owner must enter into for:

- Design and engineering of the solar collection and power generation system;
- Procurement of power generation equipment, such as (in a photovoltaic ("PV") system) PV panels, mounting racks, inverters, and a collection system, or (in a solar thermal system) concentrating mirrors, a mounting and tracking system, a collection tower, and turbines, as well as transformers and interconnection to the electrical grid;
- Obtaining construction services necessary to install and commission the power generation equipment and the balance of plant facilities; and
- Operation and maintenance of the completed facility.

Frequently, engineering procurement and construction tasks are combined within a single agreement, called an "EPC agreement" or a "design-build agreement" or (if substantially all project tasks are assigned to a single entity) a "full-wrap" or "turnkey" agreement. It is also common to have separate agreements for procurement and installation of major power generation equipment supplemented by a "balance of plant" agreement for the construction of ancillary facilities.

Alternatively, the project developer may enter into separate agreements with multiple suppliers of equipment, materials, design and engineering services, construction or installation services, or any combination thereof. It will be critical in such cases to coordinate these engineering, procurement, and construction agreements to make sure that they collectively produce a complete project.

Depending on the contractual structure, product or service warranties, insurance, and other matters may be addressed in the full-wrap agreement or may be addressed in individual agreements. Understanding how these issues impact each other is essential for creating a set of coordinated agreements.

II. Design and Engineering Services. Solar power projects require certain design and engineering expertise that is unique to this sector of the power generation industry. The designers and engineers must coordinate their services with the structural and electrical designers and engineers working on the structure to ensure proper integration and scheduling. Historically, relatively few companies designed, engineered, and manufactured solar energy generation equipment, PV or thin film panels, or solar thermal and concentrated solar units. Today there are a number of manufacturers in each of these areas.

With the growth and monetization of the industry and the maturation of incentives, new vendors are entering the market regularly. Currently, solar technology provides for various systems, from solar thermal hot water or concentration systems to silicon cell or thin film PV generation panels. The needs and requirements for any particular project, however, are in part dictated by its operating parameters, which are in turn dictated by the project's purpose, energy load, and location.

For instance, the weight tolerance of a rooftop installation will be very different from the weight tolerance of a ground-mount installation. Consequently, much lighter panel designs are likely to be necessary for a rooftop installation even if the rated output is the same.

III. Construction and Installation Services. Solar systems are generally assembled from predesigned components that are aggregated and installed to suit the project's needs. Nonetheless, substantial design and engineering work must still be performed at the project site to integrate the chosen system or systems into the project, including the necessary interconnection requirements. These design and engineering services, and related procurement and construction work, may be performed by the supplier of the solar equipment and materials under one or more agreements, but are often provided by a third party contracting directly with the project owner/developer or design-builder.

IV. Typical Contractual Structure for a Distributed Generation Solar Project. Given the multiple factors influencing the development of a distributed generation solar energy project, no single contractual structure applies to all projects. However, the following example of a contractual structure used for a particular project illustrates, in a limited way, how a project owner, its design-builder or general contractor and prime architect, and a solar equipment supplier might address certain common concerns.

In this example, a project owner wants to install a PV system on its building to provide a portion of its electrical needs. The owner wants to have the same entity design, install, test, and commission the system, as well as construct the electrical interconnection facilities and ensure a minimum yearly electrical output. The owner also wants to make sure it can enforce any warranties provided by third-party subcontractors and suppliers of materials and equipment, and wants liquidated damages for any delays that might affect its business or ability to claim tax credits for the system under state and federal tax codes.

The project owner and the solar contractor enter into a solar installation agreement whereby the contractor agrees to design, install, test, and commission an 870-kW PV system, including necessary interconnection facilities, on the owner's property.

Under the agreement, the owner has the right to review all subcontracts for equipment and design and installation services entered into by the contractor, and any such subcontracts are required to contain certain provisions for the benefit of the owner. The agreement also provides for delay liquidated damages, whether or not federal tax credits are lost due to the delay. Finally, due to the electrical integration element of such a project, the agreement provides that final completion (whereby final payment is due to the contractor) is conditioned on approval of the project by the local utility and receipt of all appropriate electrical inspection certificates.

The slate of issues that the parties address in the installation agreement includes the scope of work, inspections and testing, liens, measures of completion, rebates and subsidies, system and work warranty obligations, coordination of activities, permitting reports, title and risk of loss, energy guarantees, and limitations of liability.

A. Scope of Work. In the example above, the parties placed great emphasis on the description of the scope of work set forth in the installation agreement. In general, except in true turnkey projects based solely on performance specifications, the parties' scope-of-work provisions should describe, in detail, the actual design, engineering, and construction obligations of the contracting parties, as well as their coordination with other service providers on the project. The scope of work should incorporate the system's performance and design specifications by reference to either an attached annex or a specific set of separately prepared plans and specifications. Generally, whatever is not provided for in the contractor's scope of work is the project owner's responsibility to complete or to contract with third parties to complete. A solar energy system contractor's scope of work typically includes the design and engineering of the system, including its principal parts and components, as well as certain obligations relating to commissioning and performance testing of the major components of the system, and related warranty work. The contractor's scope of work may include providing operations and maintenance services for a set number of years after completion of the system. These services may also be the subject of a separate agreement. As with other aspects of such an agreement, the scope-of-work provisions will probably be heavily negotiated. Care must be taken to coordinate the scope of services being provided by the contractor with the scope and timing of services being provided by third parties on the project to minimize conflicts or gaps.

B. Measures of Completion and Start-up Obligations. The scope-of-work provisions of the relevant agreements typically determine who will be responsible for facility start-up and commissioning and when and how such activities will be accomplished. Given a solar system supplier's in-depth knowledge of its products, the supplier (or its design subcontractor) will, at a minimum, supervise system start-up and may also be engaged to commission and optimize the products and systems it supplies. However, this work can also be undertaken by the project owner/developer (with assistance from the supplier) or by a third party contracting directly with the project owner/developer. In any case, the relevant agreements must address the stages of completion, such as actual delivery of the equipment to the project site, followed by erection, installation, start-up, and testing. Once these progress milestones are established, completion is generally evidenced by certifications of, for example, "substantial completion" (or "commercial operations"), "final completion," and "final sign-off." Each such certification is considered an incremental measure that the project must satisfy in order to progress to the next measure. As with other supply- and construction-related agreements, progress payments by the project owner/developer to the supplier/contractor (as set forth in the relevant agreement) will be based, in part, on the milestones described above. For instance, the owner/developer typically pays a certain amount toward the agreed-on contract price when the order for major equipment is submitted and then makes additional payments upon (1) the delivery of the major equipment to the project site, (2) the erection or installation of the equipment, (3) successful testing of the control and monitoring system, and (assuming the foregoing stages are executed properly) (4) the final sign-off by the parties on the project. The payment schedule can also be based on monthly applications for payment based on expenses and labor incurred in the foregoing period, with a percentage holdback (for possible repairs, claims, or liens) to be released at the time of final sign-off. Or the parties can negotiate milestones that suit the project or their desire or ability to manage certain specific risks.

C. Warranty Obligations and Performance Guarantees. Warranty obligations and performance guarantees are likely to be an issue of substantial negotiation between parties to solar energy system supply and balance of plant agreements. The nature and scope of such warranties will, however, depend on what services, materials, and equipment the party is contracted to provide. An equipment supplier's warranties generally include such things as a general parts warranty (the definition of a defect can be important when determining what is included or excluded as a defective or nonconforming part or component in a solar energy system or related facility), a power curve warranty (this refers to the measurement of a solar equipment component's power performance), and related matters. For a contractor providing only installation services and materials, the warranties are generally limited in scope relative to those of an equipment supplier, but would still include warranties relating to parts and materials used in installation and any engineering services provided. If both equipment and installation services are provided by the same contractor, or through subcontractors, it is important to ensure that the owner/developer has the right to assert direct claims under warranties provided by third parties. It is also important to specify with a contracting party minimum terms that must be negotiated into third-party agreements.

The issues that contracting parties consider in respect of warranties include (1) the period or term of a particular warranty and whether the term can be extended (it is common for a supplier to offer certain extended warranty services for an agreed-on price), (2) the definition of a defect and a serial defect (important in projects in which solar energy equipment uses identical parts and components; serial defects are those that appear in multiple components), (3) limitations on warranty arising from acts of third parties such as operation and maintenance contractors or the system operator, and (4) the remedial measures a contractor may take to repair or cure any defect. Additionally, a project owner/developer may require that any third-party or subcontractor warranties that the supplier or contractor possesses in respect of any parts or components used in the system are "passed through" to the project owner/developer.

The issues that the parties consider relating to performance guarantees include (1) what are appropriate measurements of performance both for project components and for fully assembled systems, (2) when performance testing is to be done, under what external conditions, and by whom, (3) the consequences if performance testing is not successful (possibilities include allowing the relevant contract or to make repairs and charging damages measured by the degree to which the test was not successful), and (4) the extent to which the owner/developer has a right to the benefit of the supplier's improvements in technology.

D. Limitation of Liability. Like other contractors and vendors, solar project suppliers and contractors may seek to limit their liability to a project owner/developer. A common request is for a waiver of consequential, indirect, incidental, and special damages. Such clauses should be negotiated carefully because what qualifies as a "consequential" as opposed to a "direct" damage may be unclear. A contractor may also seek to limit its liability for late performance to liquidated damages of a certain value, usually an agreed-on percentage of the value of the relevant agreement, and may seek to establish an aggregate liability limit. The project owner/developer should consider bargaining for exclusions to such contractor liability limitations. For instance, the contractor could agree that its limitation of liability provision would not apply if the owner/developer were unable to satisfy its contractual commitments under a power purchase agreement or to obtain certain time-sensitive benefits or credits, such as a tax credit due to events in the contractor's control or a risk assumed by the contractor.

E. Solar Tax Credits. The economics of a solar energy system, and an overall project budget, often depends on obtaining certain benefits provided under state and federal law for renewable energy projects, including the federal solar tax credit ("STC") found in Internal Revenue Code section 48. The STC is a tax credit equal to 30 percent of the tax basis of any energy property, including certain solar energy equipment. This same equipment can qualify for greatly accelerated depreciation deductions that can be taken over five years using the double declining balance method. The property must be placed in service or substantial costs incur before December 31, 2010. States such as Oregon and California offer additional state tax credits applicable to the installation of solar energy equipment. The loss of the STC, or of similar state and federal benefits, can be very serious because the benefit, once lost, may never again apply to the project (unlike damages for failure to achieve an operational status for purposes of net metering, which would likely be limited to the actual period of delay), and thus could have long-term economic consequences. STC-related damages are usually the subject of much negotiation between the supplier or contractor and the owner/developer. Insurance coverage may be available for certain delay-related risks, including failure to qualify for an STC.

V. Other Issues.

A. Project Financing. A solar project owner/developer often requires some form of substantial debt financing or joint venture financing to pay for the design, engineering, procurement, construction, and initial operations of the project. Financial institutions and potential investors will demand the opportunity to review and comment on a project's design and engineering, procurement, and construction agreements (as well as related operations and maintenance and warranty agreements, if separate) before committing funds. Of special interest to prospective lenders and investors are the provisions in the agreements that provide the lender or investor with the ability to take over the project if the project owner/developer (the borrower) defaults, and the provisions that specify the extent and nature of any damages available to a project owner/developer from a contractor for late completion or failure of the project to generate expected amounts of power. Also, financial institutions will want to comment on the payment plans and security, warranty, and inspection provisions set forth in the project agreements.

Due to such involvement, and to avoid issues arising from any potential inconsistencies, the project owner/developer should be prepared to present a consistent and cogent set of project agreements to lenders and investors, and to listen to their suggestions for such agreements. Further, the owner/developer should be prepared for the possibility that lenders and investors may want to make substantial changes in the negotiated agreements. For instance, lenders will often be interested in the project's financial and operational viability (as may be reflected in a feasibility study), and much of that interest will necessarily focus on the project owner/developer's rights under the relevant agreements. In particular, lenders will be interested in the extent, limitation, and operation of any contractor warranties, contractor indemnities, insurance policies, progress or performance-test milestones and payments, and performance and payment guarantees. Lenders will also want to know whether the various agreements are entered into on an "arm's-length" basis, meaning (among other things) that the terms and conditions of such agreements are based on typical commercial terms and standards.

B. Performance and Payment Guarantees. A project owner/developer should cause the various contractors to procure, for the benefit of the owner/developer, performance and payment bonds (or other guarantees) to secure the obligations of the various contractors (whether engineers, contractors, or other parties) to complete their work on time and in accordance with the requirements of their various agreements, and to protect against liens and claims from unpaid contractors and subcontractors. Typical guarantees are described below.

- *Performance Bond:* A performance bond is usually issued by a bank or bonding company, is selected or approved by the project owner/developer, and states an agreed-on "penal sum." This sum is payable upon the owner/developer's demand in the event that the contractor fails to perform its contractual obligations in a proper and timely manner. For instance, when the contractor defaults or cannot complete the project, the owner/developer may call on this bond to pay another contractor to complete the project. The owner/developer will want to reserve its other rights against a defaulting contractor in the event that the performance bond does not fully cover the owner/developer's costs of completing the project or associated with damages the owner/developer may owe to a third party as a result of any default by the owner/developer.

- *Payment Bond:* A payment bond is intended to ensure that if the contractor defaults on the project, its subcontractors and suppliers will be paid without the necessity of filing liens or other security interests against the project owner/developer's property. If a lien claim is asserted, it may be "bonded-over" so that it attaches to the payment bond or other security instead of the property. Lenders, upon their review of the agreements, may demand or require payment bonds or other guarantees to enhance their security interests in the project. Methods of substituting bonds for lien claims vary from state to state, so careful attention to the laws of the project state is important.

The project owner/developer or the lenders may require other security from contractors, such as parent guarantees, standby letters of credit, and other forms of assurance. The contractors will seek ample opportunity to cure any default or delay, and will try to limit the project owner/developer's ability to call in performance or payment bonds or other security without clear proof of a failure of performance by the contractor. In turn, contractors may demand some form of reciprocal security issued by the owner/developer or its parent company, including parent guarantees, payment guarantees, and the like, particularly if the owner/developer's only substantial asset is the project itself.

C. Lien Release Issues. When the project owner/developer makes periodic payments to contractors (and thus also to subcontractors and suppliers), the owner/developer should obtain lien releases. A lien release will help protect the owner/developer from liens being filed on the project by subcontractors that have not been paid by the primary contractor. Such liens are undesirable because, once filed, they can delay or interfere with the project's financing or sale. They also generate litigation, in which a successful lien claimant is often entitled to recover its attorneys' fees in addition to the contractual amount due. Worse still, if a lien claimant is successful, such a lien could be used to force the sale of the project, or part of it, which would further interfere with the owner/developer's plans for the sale or refinancing of the project. Many financing agreements will also consider a lien a breach of the agreement.

D. Insurance and Indemnity Issues. A project owner/developer should obtain appropriate indemnities and insurance coverage from the various parties with which it contracts, and should require those parties to obtain similar protections from their subcontractors and material suppliers for the benefit of the owner/developer. Relevant indemnities include a general indemnity for personal injury, death, and property damage claims, contractor and subcontractor lien indemnities, an indemnity for taxes (other than those payable to the owner/developer), an indemnity for violation of applicable laws, and an indemnity for intellectual property infringement claims. Appropriate insurance policies include commercial general liability, workers' compensation and employer's liability, automobile, errors and omissions (for design and engineering services), and builder's all-risk (property insurance for the project improvements). Such policies should name the owner/developer and its financing parties as additional insureds and contain appropriate waivers of subrogation. Appropriate policy limits will vary with respect to the nature of the work being performed and the scope of the project. It is advisable for an owner/developer to consult with an insurance or risk management specialist to ensure that appropriate types and levels of coverage are obtained.

VI. Current Developments. As the industry has matured and market demands have accelerated because of public interest in climate change, greenhouse gas emissions, and energy efficiency, relative bargaining positions have changed significantly. A few short years ago, solar energy was prohibitively expensive technology for the average commercial developer and for all but the environmentally committed individual home builder. Now, with the combination of incentives, the influx of research and development aimed at making solar energy financially feasible in all markets (including potential third-party financing and solar energy system leasing programs), and robust expansion in solar energy technologies, the on-site solar energy market has expanded dramatically. Now creative and experienced developers are working with new players and creative strategies to implement on-site solar energy technologies in their developments—with great success.

Chapter Five
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Regulatory and Transmission-Related Issues—

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Long before a solar developer begins generating the first kilowatt of power, the developer must decide on a regulatory structure for the project, negotiate and execute net-metering or transmission and interconnection agreements, and purchase necessary transmission and ancillary services or distribution-level services. Solar developments come in many different forms, and business models range from installations for the installer's own electric needs and sales directly to third-party retail customers to large, utility-scale solar developments dozens or hundreds of megawatts in size. Whether and to what extent the developer will be subject to regulation for the development of the project and the sale of the electricity generated by the project will depend on the business model, the size of the project, and the use to which the purchaser puts the energy (*i.e.,* direct consumption or resale). This chapter presents a general discussion of these issues on the federal level and discusses generally what procedures might apply on the state level. Of course, specific state-level regulation will vary from state to state. Before embarking on a particular course of action, it is highly recommended that a developer seek the opinion of qualified counsel, especially considering that many of the laws and regulations relating to these topics may be affected by recent legislation and ongoing rulemaking proceedings.

I. Federal Regulatory Structure Issues: PUHCAs, EWGs, and QFs. The Energy Policy Act of 2005 was signed into law on August 8, 2005, repealing in part the Public Utility Holding Company Act of 1935 ("PUHCA 1935") and enacting the Public Utility Holding Company Act of 2005 ("PUHCA 2005"). By opening the door to certain utility acquisitions and mergers that had been prohibited since 1935, PUHCA 2005 is likely to trigger a consolidation of the electric utility industry, which will present both challenges and opportunities for solar developers.

Under PUHCA 1935, nonexempt renewable energy project companies were subjected to extensive regulation by the Securities and Exchange Commission (the "SEC"). Although the SEC will no longer be regulating nonexempt renewable energy project companies (such as solar developers), PUHCA 2005 has (1) granted state regulators and the Federal Energy Regulatory Commission ("FERC") broad access to books and records of such companies and (2) provided for FERC review of the allocation of costs for nonpower goods or services between regulated and unregulated affiliates of such companies.

Solar project companies can obtain exemptions from these requirements. The two most common exemptions are for the project owner to obtain status as either an exempt wholesale generator ("EWG") or a qualifying facility ("QF"). Each of these categories is summarized below.

A. Exempt Wholesale Generator Status. In an effort to stimulate wholesale electric competition, Congress enacted the Energy Policy Act of 1992, which created an exemption from PUHCA 1935 for independent power producers that qualify as EWGs. EWG status is determined by FERC, and the EWG status begins once the independent power producer files an application with FERC. EWG status is available to any generator of electricity, regardless of size or fuel source, so long as such entity is exclusively in the business of owning and/or operating electric generation facilities for the sale of energy to wholesale customers.

Independent power producers should be aware of several issues associated with EWG status. First, the "exclusively own and/or operate" requirement mentioned above typically requires the creation of a special-purpose entity to own the solar power generation facility and sell its electrical output. Second, EWGs are restricted to wholesale sales and therefore cannot take advantage of retail sale opportunities in jurisdictions that have approved retail direct access, or would permit the solar developer to sell directly to retail consumers without becoming regulated public utilities as discussed below. Finally, EWGs are restricted in their ability to enter into certain types of transactions (such as leases) with affiliated regulated utilities.

Rates for wholesale power sales by EWGs are subject to FERC regulation under Section 205 of the Federal Power Act. As a result, an EWG must apply for, and FERC must grant, market-based rate approval, *i.e.,* power-marketing rights, before an EWG can sell bulk wholesale power at market prices. FERC generally grants market-based rate approval, provided that the applicant and its affiliates (if any) demonstrate a lack of horizontal market power (electric generation) and vertical market power (transmission and other barriers to market entry) in the relevant markets, and have satisfied restrictions on affiliate abuses contained in FERC regulations. FERC has recently adopted new criteria for demonstrating satisfaction of these requirements, which should be reviewed with knowledgeable attorneys before filing for market-based rate approval. Once FERC grants market-based rate approval, the EWG will have ongoing filing requirements.

B. Qualifying Facility Status. The Energy Policy Act of 2005 changed the rules for QFs, introducing both risk and opportunity. Developers of new solar projects will want to familiarize themselves with these changes.

During the energy crisis in the late 1970s, Congress passed the Public Utility Regulatory Policies Act of 1978 ("PURPA") to encourage the development of cogeneration and small renewable energy projects, which are referred to as QFs. Before the passage of the Energy Policy Act of 2005, PURPA was important to renewable power developers for several reasons, one of which was the exemption for QFs producing up to 30 MW from most of the provisions of the Federal Power Act and from certain types of state utility regulations. The Energy Policy Act of 2005 (and FERC's interpretation thereof) has limited the applicability of these exemptions, making it more difficult for projects to obtain such exemptions. On the other hand, the Energy Policy Act of 2005's elimination of PURPA's ownership requirements is likely to generate new interest in utility ownership of QF facilities—increasing the value of both new and existing QF projects.

The Energy Policy Act of 2005 has also narrowed the advantages that renewable power generation QFs previously enjoyed compared to EWGs. First, as mentioned above, QFs no longer enjoy broad exemptions from the requirements of the Federal Power Act. Significantly, only certain QFs continue to enjoy an exemption from the need to obtain authority from FERC to sell power at market-based rates before selling energy from the project as discussed above. Specifically, (1) sales of energy and capacity made (2) by QFs 20 MW and smaller, (3) pursuant to a contract executed on or before the effective date of FERC's applicable rules, or (4) pursuant to a state regulatory authority's implementation of PURPA remain exempt from Sections 205 and 206 of the Federal Power Act. Second, the Energy Policy Act of 2005 weakened the "must buy" obligation that allows QFs to require retail public utilities to purchase QF output at the utility's "avoided costs," *i.e.,* the costs the utility would have incurred but for the QF purchase. A utility may now petition FERC for an exemption from PURPA's mandatory purchase requirement if it can demonstrate that a QF in its service territory would have nondiscriminatory access to competitive wholesale markets for energy and capacity that meet certain standards. The potential loss of this "must buy" requirement could be significant because state-established "avoided cost" rates have often exceeded prevailing wholesale market prices, and such published rates have been an effective negotiating tool for gaining favorable pricing under non-QF renewable energy sale agreements. One clear advantage of QFs over EWGs is that PURPA does not restrict the ability of QFs to make retail sales to the extent such sales are allowed under state law. Another distinction between QFs and EWGs is that QFs are often interconnected under state regulators' interconnection rules, which may or may not be advantageous for a particular project. However, if the QF's owner sells any of the QF's output to any entity other than the interconnecting utility, the QF's interconnection will be subject to federal jurisdiction.

C. **Other Ongoing Regulatory Requirements.** Whether a solar developer is an EWG or a QF, or has FERC approval to sell power at market-based rates, the solar developer may also be subject to other filing and reporting obligations at FERC. For example, FERC's prior approval may be required before the developer disposes of FERC-jurisdictional facilities, subject to certain value thresholds. This prior approval requirement generally applies to indirect disposition of such assets, which can include the sale of project membership interests to investors, and accordingly, consultation with a knowledgeable FERC attorney is advised in connection with any plans by the developer to restructure, sell, or otherwise dispose of its assets. Likewise, FERC may require updates to the market-based rate filing, EWG application, and/or QF certification in connection with changes in the material facts on which FERC relied in granting such status. Finally, FERC notice or approval may be required when certain directors or officers hold similar positions in related affiliates. The foregoing list is not exhaustive and is intended to highlight only some of the various FERC notification and filing requirements related to jurisdictional solar developers, and therefore consultation with knowledgeable attorneys is recommended.

II. **State Regulatory Structure Issues: Regulation as a "Public Utility."** An important issue of state regulatory concern for solar developers looking to make retail sales to third parties is whether such sales will result in the generation owner being regulated as a "public utility." (Note: If the sale is a wholesale sale (*i.e.,* a sale for resale), the sale will be governed by federal law.) Parties selling electricity to end-use customers are often heavily regulated as public utilities under state law, including regulation of rates and terms of sale for electricity. Typically, a solar generation owner will want to ensure that it is not regulated as a public utility if it sells power to third parties. Whether a solar generation owner is regulated as a public utility will vary from state to state, and potentially relevant factors include the number and type of customers supplied and the location of those customers compared to the location of the generation. In California, for example, generally an entity that sells electricity to third parties is a public utility regulated by the California Public Utilities Commission. In some circumstances, however, a solar generation owner can sell power to not more than two other corporations or persons for use on the real property where the electricity is generated, or on property immediately adjacent thereto, without being regulated as a public utility.[1]

III. **Transmission and Interconnection Issues.** To obtain project financing and gain access to markets for project output, solar project developers that are not interconnecting pursuant to a state's net-metering rules or pursuant to a state-jurisdictional distribution tariff discussed above must negotiate agreements to interconnect with the transmission system of the applicable transmission provider. In addition, a developer will need to obtain any necessary transmission service to deliver project output to the purchasers of that output. Most lenders and

[1] Certain additional restrictions also apply to this exemption; whether the exemption applies depends on the particular situation.

many investors will require evidence of executed generation interconnection and/or transmission service agreements as a condition of financing or project purchase. Most transmission providers are subject to jurisdiction by FERC, and therefore transmission service agreements and generation interconnection agreements are generally subject to regulation by FERC. Interconnection to utilities exempt from FERC interconnection rules raises unique questions, which should be considered when selecting a project site.

A. Generation Interconnection Agreements. A generation interconnection agreement is a contract between the generation owner and the transmission provider that owns the transmission system with which the project will be connected. FERC's Order No. 2003 establishes standard interconnection procedures, including a standard interconnection agreement for generators larger than 20 MW ("Large Generators"). Similarly, FERC Order No. 2006 establishes standard interconnection procedures, including a standard interconnection agreement for generators with a capacity of 20 MW or less ("Small Generators"). More recently, however, certain regional transmission organizations, such as the Midwest Independent System Operator, the California Independent System Operator, and the Southwest Power Pool, have reformed their interconnection procedures and agreements in response to crippling backlogs and delays in the existing queues. Generally, queue reform has implemented a "first-ready, first-to-advance" methodology, requiring larger study deposits that may be nonrefundable and stricter adherence to progress milestones, and allowing fewer opportunities for developers to delay the process. Queue reform is happening across the nation, and each reform to FERC's traditional approach to interconnection responds to the problems faced in a particular region. Thus, it is important to engage knowledgeable counsel in order to remain aware of how the interconnection process may vary from one area to the next.

Generally, the two main purposes of interconnection agreements are (1) to identify and allocate the costs of any new facilities or facility upgrades that need to be constructed and (2) to set forth the technical and operational parameters governing the physical interconnection.

1. Interconnection Facilities and Cost Allocation. In general, before the execution of an interconnection agreement, the transmission provider will commission a series of interconnection studies, at the interconnection customer's expense, to determine what new interconnection and transmission facilities need to be constructed to accommodate the new generation facility, and the cost of such construction. Like any renewable energy project, if it is located in a remote place without existing transmission infrastructure, substantial new facilities and facility upgrades may be required.

Under FERC Order Nos. 2003 and 2006, the costs of interconnection facilities and distribution upgrades are paid for by the interconnection customer. Network upgrades (*i.e.,* upgrades to the transmission system at or beyond the point of interconnection) are treated differently, however, and transmission credits may be available to the interconnection customer. For example, if the transmission provider is a nonindependent entity, such as a vertically integrated utility, the interconnection customer will pay the upfront cost of any required upgrades, but the transmission provider will reimburse the interconnection customer by providing transmission credits. However, in certain transmission systems, such as those controlled by the Midwest Independent System Operator or the PJM Interconnection, the interconnection customer will not be entitled to all or part of this reimbursement, and cost allocation and refund methodologies are often in flux. Interconnection customers may not receive full reimbursement for network upgrades elsewhere in the country as well, and the nature of the network upgrade reimbursement (*i.e.,* partial or full) may also impact whether and to what extent tax gross-ups must be included in the payment by the interconnection customer.

Determining the point of interconnection for purposes of distinguishing between interconnection facilities and network facilities is an area of potential dispute between the parties. Transmission providers have an incentive to design interconnections in a manner that places the majority of the new facilities on the customer's side of the interconnection, thereby depriving the customer of a transmission credit to offset the costs of such facilities. Consistent with FERC precedent, only those facilities that are necessary to reach the point of interconnection are properly classified as interconnection facilities. In addition, for most interconnections of Small Generators, network upgrades are unusual. Agreements to reclassify interconnection facility costs as network upgrades, or vice versa, have not been found to be "just and reasonable" and have been rejected by FERC, although some transmission owners or operators continue to seek changes allocating additional costs to generators.

2. **Technical and Operational Issues.** Interconnection agreements address such technical and operational issues as reactive power factors, responsibility for electrical disturbances, metering and testing of equipment, exchange of operating data, and curtailment events. In some cases transmission providers attempt to impose technical requirements or control area services that go beyond those that FERC has typically approved. Solar developers should pay close attention to the technical requirements and control area charges proposed in the interconnection agreement and ask a knowledgeable attorney to review them for conformity with FERC policy. In connection with its adoption of standard procedures and agreements in its Order No. 2003, FERC began a separate rulemaking to establish certain technical standards applicable to interconnection of large wind generating plants that would be included in Appendix G of the Large Generator Interconnection Agreement. This rulemaking resulted in FERC Order No. 661, which is not applicable to solar projects or other intermittent resources other than wind. Nonetheless, FERC left the door open to take a similar approach for non-wind technologies. The rules address supervisory control and data acquisition capability requirements, as well as operational restrictions and requirements related to reactive power factors and low-voltage ride-through. Solar developers may wish to consider whether these provisions would help with transmission issues, as additional operational and technical experience are gained. Finally, the generator interconnection agreement may require compliance with applicable National Electrical Code ("NEC"), Institute of Electrical and Electronic Engineers ("IEEE"), and Underwriters Laboratories ("UL") standards or other state or local electrical code standards to ensure proper installation and use of certified equipment. Even if the generator interconnection agreement is silent on NEC, IEEE, and UL standards, such standards may apply through state or local law and rules and should be considered before hiring contractors and beginning engineering.

B. State Interconnection Agreements and Net Metering. Distributed solar generation interconnecting at low voltage may be governed by state utility commission rules. Generally speaking, distribution-level interconnection is governed by state utility commission rules; however, if the distribution facilities to which the project would be interconnected are subject to a FERC-jurisdictional open access transmission tariff, and if the interconnection is for purposes of making wholesale sales, FERC's generation interconnection procedures would likely apply. Such dual-use facilities (*i.e.,* facilities that provide delivery to both end users and wholesale purchasers) are regulated by both state and federal governments within their respective jurisdictions. In addition, if interconnection is with an entity that is not subject to state or FERC jurisdiction, then the developer may face additional issues and negotiations that are beyond the scope of this summary, but should be considered and discussed with a knowledgeable attorney.

If interconnection is governed by state utility commission rules, simplified procedures may apply for interconnection below a certain size threshold, including standardized form agreements specifically designed toward interconnecting solar distributed generation. Standardized agreements have the benefit of lowering transaction costs, although the ability to negotiate terms and conditions in the agreement is significantly reduced if not effectively prohibited. Interconnection procedures and agreements can in many cases be obtained by contacting the local utility. Generally, the state-level interconnection agreement will cover technical and operational issues, as well as the point of interconnection and responsibilities of the customer and utility.

Solar generation interconnecting at the distribution level may also be able to take advantage of net-metering rules. Net metering is an arrangement with a customer's utility whereby the customer uses its own installed generation to offset its energy usage and receives a credit for excess generation. Generally, a customer ends up with a lower utility bill for two reasons: (1) the net-metering arrangement allows the customer to offset its own electricity usage on an instantaneous basis with the solar power produced by its own solar generation system, thereby reducing the amount of power the customer must buy from the utility, and (2) the customer can deliver generation in excess of that used by the owner back to the utility and receive a credit from the utility for such generation. Whether the customer can roll forward or receive a cash payment for any credits for excess generation varies from state to state. Essentially, a net-metering arrangement allows the generation owner's meter to "run backward" when excess generation is supplied to the utility, offsetting the bill from the utility. However, FERC may assert jurisdiction over a net metering facility if the facility makes net sales of energy (*i.e.,* the facility produces more energy than can be consumed) to a utility over a billing period.

There are usually several restrictions that apply to the net-metering arrangement. Generally, state law and public utility commission rules will set forth the process by which an entity becomes a net-metering customer. State law generally sets forth the criteria for the type of customer (*i.e.,* residential, commercial, or, in some states, limited commercial or industrial customers) and the size of the distributed generation project eligible for the state's net-metering program, plus safety requirements and other program restrictions and requirements. Finally, state law and commission regulation may restrict the ability of a third party to own the renewable energy system used by a customer in that customer's local utility's net-metering program. In addition to eligibility restrictions, potential net-metering customers should look out for other potential issues in net-metering arrangements, such as high liability insurance coverage requirements, indemnification provisions, and other forms of customer charges associated with net metering. These charges may include interconnection charges, standby charges that the utility may assess to cover the costs of being on "standby" to provide power to the customer if the customer's generation does not produce energy when expected, and equipment charges for specialized metering or safety equipment.

Because net-metering laws and rules vary from state to state, a solar developer should consult a knowledgeable attorney about the applicable rules.

C. Transmission Service Agreements. Interconnection service or an interconnection by itself does not confer any delivery rights from the generating facility to any points of delivery. Therefore, unless the project owner is able to sell the output of the project at the point of interconnection with the transmission grid, the project owner will be required to obtain transmission service from one or more transmission providers to wheel project output to the purchaser. In addition, acquiring adequate transmission service is essential to obtaining debt or project financing on reasonable terms and conditions.

Jurisdictional transmission providers are required by FERC to offer transmission service on an open, nondiscriminatory basis pursuant to a transmission tariff that will govern the terms by which such service is provided. Upon receiving a request for service, the transmission provider will evaluate available transmission on its system and determine whether additional transmission facilities need to be constructed to accommodate the requested service. In major parts of the United States, the transmission provider is a Regional Transmission Organization ("RTO") or Independent System Operator ("ISO") rather than the actual owner of the applicable transmission facilities. Acquiring transmission service from nonjurisdictional transmission providers raises additional questions that depend on the nature of the entity, the scope of its transmission facilities, and other issues beyond the scope of this chapter.

Under FERC's general transmission pricing policy, generators pay the greater of the incremental costs or embedded costs associated with requested transmission service. Incremental costs refer to the additional system costs (*e.g.,* construction of new facilities and upgrades) resulting from the requested service. Embedded costs reflect an allocation of system costs to the various users, generally based on megawatts of service. A solar power project that is located far from adequate transmission infrastructure may require substantial system upgrades that will cause the transmission customer to pay an incremental cost that exceeds its pro rata share of the system costs. For these and other reasons, the customer may want to consider making a sale to a third party, rather than becoming a transmission customer of the transmission provider with which the developer interconnects.

These transmission pricing rules may be different if the transmission provider is an RTO. The rules of the existing and proposed RTOs may in fact be much more favorable to solar power generation than is FERC pricing. For example, an RTO may recover the fixed costs of the applicable transmission system from end users, with a generator facing only transmission congestion charges. The RTO also may eliminate rate "pancaking," which is the imposition of multiple transmission charges for use of more than one transmission owner's transmission facilities.

IV. Ancillary Services: Imbalance Charges, and Firming and Shaping Products. Project owners will be required under the transmission provider's tariff to provide or purchase transmission ancillary services, which are products designed to ensure the reliability of the transmission system. Of these products, generation imbalance service often poses the most difficult issues for renewable energy power operators with intermittent resources. Generation imbalance service is a product that allows a generator to deliver an amount of energy that differs from the amount it had prescheduled for an hour. Although solar energy is expected to be more predictable than wind energy, certain types of solar technology have more intermittency, which must be considered in terms of imbalance requirements and penalties.

Most transmission providers had historically priced generation imbalance service based on the cost or value of the generation, plus a premium. For example, a transmission provider may have charged generators 110 percent of the cost of providing replacement energy in hours when the actual output of a generator was less than scheduled output, and compensated generators 90 percent of the value of energy produced in excess of the amount scheduled. In addition to this basic charge, penalties attached if the difference between scheduled and actual generation exceeded a specified threshold. Such charges were intended to promote accurate scheduling and to prevent system reliability concerns associated with large-scale imbalances; however, these penalty-type imbalance charges punished intermittent resource generators for variations in output over which the generators lack control.

Acknowledging that existing energy imbalance charges under Schedule 4 of the open-access transmission tariff ("OATT") and the generator imbalance charges described in FERC Order No. 2003 are the subject of "significant concern and confusion in the industry," FERC found that imbalance charges varied widely, were excessive, and penalized transmission customers whose actual generator or energy imbalances deviated from corresponding schedules without reference to the actual cost of providing imbalance service. This approach made sense if customers could predict generation output with a high degree of accuracy and control the quantity dispatched. FERC recognized, however, that the penalty did not make sense when applied to intermittent generation, which cannot be forecasted as reliably and for which the customer has little control over dispatchability.

Accordingly, FERC adopted rules in Order No. 890 that designed a tiered structure for imbalance charges, with increasing imbalance charges as the imbalance increases into the next largest tier. Order No. 890 also provides at least two benefits to intermittent resources. First, the rules provide for monthly netting of imbalance charges within the first tier. Second, intermittent projects are not subject to the third tier of deviation charges. Although these new rules can provide significant benefits to solar power resources, it is important to understand that transmission providers may be permitted to adopt different provisions applicable to intermittent resources within their control areas. In addition, certain transmission providers are considering the imposition of a generator regulation charge, or other within-hour balancing charge to intermittent resources. This type of charge should be discussed with a knowledgeable attorney.

V. Greater Access to the Transmission Grid. FERC's Order No. 890 series is designed, in part, as an effort to improve transparency of transmission service and reduce transmission barriers for new projects. These amendments may result in increased and improved access to the transmission grid for renewable energy developers. Order No. 890 is the first major reform of the OATT since it was created in 1996.

A major obstacle to making more transmission capacity available is the fact that under current practice, long-term requests for service from a new generator may be denied based on the unavailability of transmission in only a few hours of a year, even though firm service is nonetheless available for the large majority of hours of the year. To address these concerns, FERC created two new options: conditional firm service and modified redispatch service. These two services provide new options for intermittent resources that can generally be constructed more quickly than the transmission upgrades necessary to deliver power on a firm basis.

Conditional firm service addresses the "all or nothing" problem transmission customers currently face. Conditional firm is a type of transmission service that renewable advocates have promoted as a partial solution to the lack of available firm transmission. Under this service, a conditional firm customer could enter a long-term contract for the capacity that is available on a path. The customer would have firm service except for time periods designated in the contract and would have priority over nonfirm service for the hours in which available transfer capacity ("ATC") is not available.

Modified redispatch service, which adjusts the output of various generators to allow transactions that otherwise would be blocked by congestion on certain transmission paths, is routinely used by integrated utilities (those with transmission and generation) to serve native load and network customers, and to make off-system sales. Order No. 890 requires transmission providers to offer and study the use of redispatch service to create additional long-term firm capacity on a transmission system. Under the rule, customers would agree to pay the costs of redispatch service during the periods when firm ATC is not available. As useful as these new services may be from an operational perspective, it is not clear yet whether acquisition of conditional service or redispatch service will be sufficient to obtain third-party financing for solar projects.

Even though the details of Order No. 890 are too voluminous to be adequately covered in this chapter, one important aspect of Order No. 890 is that it may increase access to existing transmission capacity and/or promote transmission expansion in key areas. Order No. 890 (1) establishes a consistent methodology to determine ATC and make certain elements of ATC more consistent, (2) requires transmission providers to participate in an open and transparent regional transmission planning process, (3) reforms pricing policies related to imbalances, credits for customer-owned transmission facilities, and capacity reassignment, (4) revises rules under which a transmission provider must provide rollover rights and require the provision of hourly firm point-to-point service, and (5) requires transmission providers to post all business rules, practices, and standards on the Open Access Same-Time Information System, and to include credit review procedures in their OATT.

VI. Reliability Standards. Recent developments in federal law have transformed historically voluntary standards into mandatory reliability standards that include ongoing, audited obligations and potential sanctions for compliance failures. FERC issued Order No. 672 on February 3, 2006, qualifying the National Electric Reliability Corporation ("NERC") as the continent-wide, FERC-certified Electric Reliability Organization ("ERO"), responsible for proposing and enforcing mandatory reliability standards. As the ERO, NERC is responsible for monitoring and improving the reliability and security of the bulk electric system and, to do so, NERC has the authority to propose and enforce mandatory reliability standards and assess fines upwards of $1 million per day per violation for noncompliance. The Federal Power Act requires that all reliability standards must be just, reasonable, not unduly discriminatory or preferential, and in the public interest. In addition, NERC has delegated to designated regional entities the authority to monitor and enforce the reliability standards, and the regional entities may in turn enforce region-specific reliability standards.

The reliability standards apply to certain users, owners, and operators of the bulk electric system, and the regional entities are tasked with maintaining a Compliance Registry, which lists organizations against which the reliability standards are enforceable. If an organization fails to register on the Compliance Registry, then the regional entity may register the entity itself. The Compliance Registry lists organizations by function, and compliance is analyzed by reference to function-specific reliability standards.

As is most relevant to solar developers, NERC requires that certain Generator Owners and Generator Operators register with the Compliance Registry. A Generator Owner is broadly defined an organization that owns generating units, and a Generator Operator is defined as an organization that operates generating units and supplies energy. There are thresholds that may dictate whether a Generator Owner or Generator Operator must register, and a solar developer should consult with a knowledgeable attorney regarding such requirements. Though initially exempted from registration, QFs are now required to register with the appropriate regional entity and to comply with the reliability standards as well.

Overall, the mandatory reliability standards pose a challenge to an industry that recognized voluntary standards for many years. Given the breadth of the reliability standards and the punitive sanctions attached, industry participants must take the appropriate steps to determine whether they should register with the applicable regional entity, to understand each function, and to implement a comprehensive program that will track and ensure compliance.

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VII. California Regulatory Developments. In California, a dynamic regulatory environment with several active state agencies, including the California Public Utilities Commission (the "CPUC"), which regulates investor-owned utilities, the California Energy Commission (the "CEC"), which regulates publicly -owned utilities and is responsible for siting thermal generation, including Concentrated Solar Power ("CSP"), has resulted in numerous ongoing efforts to increase opportunities for solar generation, both Photovoltaic ("PV") and CSP.

One focus has been on increasing opportunities, and reducing transaction costs, for solar generation, especially solar PV, between 1 and 20 MW seeking to sign contracts with California utilities. For many of these smaller projects, participation in the annual Renewable Portfolio Standard ("RPS") solicitation process—by which California's investor-owned utilities request offers from renewable generation projects in order to meet California's requirement that they obtain 20 percent of their energy from renewable resources by 2010—involves significant transaction costs that can significantly impair the profitability of the project. California currently has a feed-in tariff program for its three major investor-owned utilities that allows renewable projects of up to 1.5 MW to sign standard contracts, with a standard price, that must be accepted by the utilities until an overall megawatt cap is reached. CPUC is currently examining whether to expand this feed-in tariff to apply to projects up to 10 MW in size, and to allow projects up to twenty megawatts to participate in the program, although utilities would have the opportunity to decline contracts from projects between 10 and 20 MW. The CPUC is also considering increasing the prices paid under this program. Proposed legislation currently being considered by the California legislature would also expand the availability of feed-in tariffs.

California's investor owned utilities have also engaged in numerous efforts to increase opportunities for solar projects, and other smaller renewable energy projects. In connection with its annual RPS solicitation, Southern California Edison has offered two standard contracts, one for projects up to 5 megawatts, and one for projects between 5 and 20 MW. These standard contracts are intended to lower the transaction costs for smaller projects seeking to participate in Southern California's annual procurement of renewable resources. Unlike the feed-in tariffs, however, these contracts have to be approved by CPUC once executed.

Southern California Edison also recently received approval from the CPUC to develop 250 MW of its own solar PV projects, and to solicit an additional 250 MW of solar PV from independent developers. Southern California Edison has indicated that it is chiefly interested in projects between 1 and 2 MWs. The CPUC is currently working with Edison to implement a procedure for soliciting offers under this program. Both Pacific Gas & Electric and San Diego Gas and Electric have also submitted proposals to the CPUC to allow both utility-development and third-party development of solar PV projects. Those proposals are currently being evaluated by the CPUC. Publicly - owned utilities have also been increasingly active in seeking solar projects as well.

Another focus of California regulatory agencies has also been accelerating the permitting process for solar projects. Late last year, the CEC, which has responsibility for permitting solar thermal projects that are 50 MW or greater, signed a memorandum of understanding with the California Department of Fish and Game to provide a streamlined permitting process for renewable energy projects. The CEC, the California Department of Fish and Game, the Federal Bureau of Land Management, and the U.S. Fish and Wildlife Service also signed a memorandum of understanding, agreeing to develop a conservation plan for the Colorado and Mojave Deserts that would allow for solar and other renewable energy development, while minimizing environmental impacts. The

California legislature has also been considering various ways of altering the permitting process for renewable generation, with the goal of improving the process.

California is also involved in efforts to accelerate the siting of transmission needed for renewable generation as well. The Renewable Energy Transmission Initiative, a statewide initiative managed by a coordinating committee composed of the CPUC, the CEC, the California Independent System Operator, and several publicly - owned utilities, is currently developing a conceptual transmission expansion plan for California to reach remote renewable resources.

Obtaining transmission interconnection can be one of the more time-consuming aspects of developing a renewable project, depending on the size of the project and where it is interconnecting to the transmission system. Generally, FERC has jurisdiction over the transmission system, although for certain types of interconnection, such as net-metered projects or QFs that sell all of their generation to a utility, FERC has ceded interconnection authority to the states. Therefore, for certain projects interconnecting to utility lines, the project interconnects pursuant to rules established by the CPUC. In most cases, however, interconnection will be made under the OATT for the entity that controls the transmission line to which the project is interconnecting. In California, that could be a municipal utility such as Los Angeles Department of Water and Power or Sacramento Municipal Utility District, for transmission lines owned by those entities. For transmission lines owned by the major investor-owned utilities in California—San Diego Gas and Electric, Southern California Edison, and Pacific Gas and Electric—interconnection at the distribution level would be made through the utility. For transmission - level interconnection on utility lines, however, the California Independent System Operator has been ceded control of those lines and would be the entity to which an interconnection application would be made. The California Independent System Operator has recently revised its interconnection procedures for large generators in excess of 20 MW, in an attempt to accelerate the process for interconnection.

Given the frequently - changing regulatory environment, especially in California, it is best to consult with experienced regulatory counsel concerning permitting, interconnection, and contracting issues sooner rather than later.

VIII. Summary. Solar developers range in size and business model greatly and the regulatory and transmission-related issues are highly dependent on the unique circumstances presented by the particular project. Solar developers should be mindful of the various state and federal regulatory requirements, as well as the opportunities presented by the regulatory oversight in these areas.

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Chapter Six
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Permitting and Land Use—
Erin L. Anderson

It is not enough to have the sun and the land to construct a solar energy facility. One also needs the permits to use the land for energy generation. Even with the current favorable regulatory environment regarding renewable energy, the successful project developer knows that every element of the facility must have the right approvals to be legally constructed and operated. Failure to obtain the correct permits can be costly in terms of construction delays related to stop work orders; foregone revenues, tax credits, and commencement of accelerated depreciation; and, in today's regulatory climate, quite possibly penalties for failure to meet renewable portfolio standards.

I. Facility Permitting Rules. Energy facility permitting is traditionally a state or local jurisdiction function, unless the facility is constructed on federal land or involves other federal action.

A. State Energy Facility Siting. Many states have established administrative boards, councils, or committees that review and, in most cases, approve or deny the siting of energy facilities. At least one state, Washington, allows only the agency—the Energy Facility Site Evaluation Council ("EFSEC")—to make a recommendation to the governor about whether to approve an energy facility. The final decision under Washington's regulatory framework rests solely with the governor. In other states with siting councils, such as Oregon, Ohio, and Massachusetts, the agency itself renders a decision to approve or deny an application to site a major energy facility.

States differ greatly on whether the state will assert jurisdiction over energy facilities. Many states, such as Oregon, require energy facilities that will generate a defined amount of power to undergo siting by the state agency while allowing facilities generating amounts under the threshold to be sited by the local jurisdiction in which the facility is proposed. Other states, such as Washington, have full authority to site any size energy facility, but do so only at the election of the applicant. Some states, such as Texas, provide for no such state jurisdiction.

Once a solar developer has determined whether the state it has chosen for its project has a siting council, it must determine whether the siting council has jurisdiction over solar facilities. Siting councils are largely a product of the thermal energy facility construction wave of the 1960s and 1970s. At that time, many state legislatures set out to define the types of facilities that could be sited and typically included only the commercially viable technologies of the day. In many state siting frameworks, renewable energy technologies, such as solar, geothermal, and wind, were not even mentioned. As renewable energy has emerged as a viable industry, states have begun to add alternative energy sources to those that fall within a siting council's jurisdiction. The savvy solar developer will check the state's jurisdictional requirements carefully to determine whether the solar development will be subject to the state siting process and, if so, whether there are exemptions from or waivers for state siting process requirements.

B. Local Energy Facility Siting. In states in which there is no siting council or the council lacks jurisdiction over solar facilities, the siting decisions are made by local jurisdictions, most often township and county governing bodies. Commercial solar facilities, even those proposing to use the most modern technology, often require vast tracts of land. They may also require large amounts of water. For these reasons, as well as the cost of land and aesthetics, solar facilities are typically located outside of urban areas.

Many local governments are quite adept at solar facility permitting. Capital facility permitting is a traditional function of the local jurisdictions within which facilities are generally built, whether they be water treatment, wastewater management, or energy generation plants. As such, nearly all communities have some type of planning or community development department with skilled staff to assist in processing and reviewing permit applications. The solar facility developer should contact the planning, community development, or utility or public works department for the jurisdiction within which a proposed project lies to assess what local processes and requirements exist for a solar facility.

C. Federal Energy Facility Siting. Solar facilities proposed for construction on federal land fall within the jurisdiction of the agency charged with the land's management, most often the U.S. Department of the Interior's Bureau of Land Management ("BLM") or the U.S. Department of Agriculture's Forest Service. Federal land management policies encourage the development of solar energy on public lands. BLM issues right-of-way authorizations for solar installations, and the Forest Service issues special use permits.

D. Choosing a Siting Process. If the developer has a choice of siting entities, time considerations loom large in making a decision about which process to pursue. Many state siting councils establish a time frame within which a siting decision must be made. The rules and the exceptions thereto should be examined before electing a process. Additionally, siting councils typically have experienced staff who should be consulted for firsthand observations on how smoothly and expeditiously prior siting matters have proceeded. These same state siting entities typically have greater technical resources for review of an application, which often results in a more thorough review. The downside, however, is that this often translates into a longer permit review process than one conducted by a local jurisdiction.

To the extent a developer has a choice of permitting agencies, there are several other factors to be weighed in choosing a siting path. The more extensive resources that are available to a state agency can result in expert review of a proposal. Local agencies often lack the financial resources to hire various experts, particularly in an emergent field such as commercial solar energy generation. The local jurisdiction may handle this lack of staff expertise by requiring that the developer fund or reimburse the local agency's costs expended in reviewing a project. A comparison should be made to determine the difference between state and local application fees and processing and review costs.

Another critical factor involves the political nature of energy facility siting decisions. Although solar facilities generally have less immediate visual impact than nuclear cooling towers, smokestacks, or wind turbines, any energy facility can evoke strong sentiments in a community. Siting of a contentious project, when conducted by a state agency, tends to be more objective and less politicized than a town hall-style local forum. When making the decision about which path to choose, the developer should consider who will be staffing the permit review, who will be making the decision, and what remedies are available under each permitting regime if a negative result is obtained.

II. Environmental and Land Use Considerations. Depending on the forum in which an application for a solar facility is processed, a variety of environmental and land use rules will be applied to evaluate the proposal.

A. Federal Environmental and Land Use Review. Approval of a facility on federal land through the issuance of a right-of-way or special use permit (as well as other federal agency approval actions) necessarily involves application of environmental review under the National Environmental Policy Act ("NEPA"). The scope of a NEPA review is broadly designed to assess the environmental impacts of a proposed development and the potential significance of those impacts. This includes assessment of project development impacts to both the built (*e.g.,* roads) and the natural (soil, wildlife, and ground and surface water) elements of the environment. Predictably, the more significant the potential for adverse environmental impacts, the more closely the project will be scrutinized. It follows that the higher the level of review, the longer the process will take. Projects that are categorically exempted from NEPA by federal regulations can result in near-immediate review. However, nonexempt actions must go through an Environmental Assessment, usually a four- to six-month process, to determine whether the solar project will cause no significant impact (finding of no significance) or will likely cause significant environmental impact, which triggers the preparation of a full-blown Environmental Impact Statement ("EIS"). Preparation of an EIS is a lengthy process that involves considerable and multiple public and agency review opportunities, and is rarely completed in under a year. Although NEPA itself is only a procedural and evaluative tool without substantive standards or requirements that must be imposed on a project, the resulting analysis of impacts, alternatives, and potential mitigation serves as the basis for imposition of conditions on projects.

B. State and Local Environmental and Land Use Review. Because our nation is a federation of states, each state puts its own imprimatur on environmental and land use review. State and local agencies typically conduct environmental reviews during the permit issuance process, whether the project calls for a siting permit issued by a state or a local permit (typically a conditional use permit).

Some jurisdictions, such as California (under the California Environmental Quality Act), conduct a comprehensive environmental review of project impacts contemporaneously with the review of the permit itself for land use and regulatory consistency. The process in such states is patterned after the federal NEPA framework and is commenced through a separate application for environmental review of the proposed project. The environmental review is conducted as an overlay to the permit review. Because environmental review regulations contain public notice and participation requirements, compliance with those requirements can add considerable time to the review process. The same procedural review is applied by local jurisdictions when reviewing a permit. The developer should consult agency staff and, if necessary, legal counsel early in the process to ascertain the responsibilities of the developer as the review progresses. There are also timelines that accompany review processes. Clarification should be obtained to determine whether timelines set (1) a maximum processing period, such as the 12-month review process promised by the Washington EFSEC or (2) a minimum period before the agency may act but not a maximum time limit for rendering a decision.

Some solar resource-rich states, such as Nevada and New Mexico, do not conduct contemporaneous environmental review processes at all. Although such states do not undertake environmental review of a permit as a separate process, some states and local jurisdictions will consider environmental issues as part of the permit application itself. Oregon, for example, has adopted criteria, applicable statewide, that address environmental issues. Solar facility developers in Oregon will encounter a host of statewide land use goals with substantive prohibitions built into them. These land use goals apply to both the state's Energy Facility Siting Council and every state's political subdivision. Such goals are stringently applied. Although there are processes to seek exceptions therefrom, those requests are reviewed narrowly and are infrequently granted. Oregon has a rich history of publishing appellate decisions of land use appeals, and legal counsel should be able to assist in determining whether the criteria for a land use goal exception have been interpreted previously, which can provide guidance for difficult siting decisions.

In addition to environmental review, applications to develop solar facilities will undergo permit review to determine whether a solar facility is in compliance with the jurisdiction's approved land use laws. The first phase of such review is nearly always to assess whether the use is allowed outright or conditionally at the proposed location. Most often, this is accomplished by reviewing the zoning code to ascertain whether the solar facility is an outright, predetermined compatible use with other uses in the zone, or is a conditional use. If the use is conditionally allowed, the environmental assessment undertaken either as part of the permit review or separately through a NEPA-like process generally provides a host of conditions that can be imposed on the facility that render it more compatible with its zone.

Additional land use laws that may apply to a solar project include surface and ground water quality and quantity protection, as well as shoreline regulations. The genesis for many of the state-administered laws is the federal Clean Water Act, although states such as Washington and California have also enacted shoreline protection laws that superimpose more review and additional permits before a solar facility may be permitted.

For most local permitting decisions, the body empowered to approve a project is a board of county commissioners or a legal equivalent or, less commonly, planning agency administrators.

C. Streamlining the Process. Some jurisdictions are beginning to recognize the value of consolidating the permitting processes for several renewable technologies. For example, a county in Washington has conducted an areawide EIS for wind energy facilities to create an overlay zone in certain areas for wind development. While the environmental impacts for wind development were being assessed, the ramifications of solar energy facility development were considered. As a result, both technologies have been established as permitted uses in certain zones. A solar facility proponent should meet early with the local planning authority to review the compendium of land use laws and determine which permits will be required, as the opportunity to reduce permitting costs is significant.

Energy generators and developers are also taking steps to reduce the time and cost of solar facility permitting by co-locating several renewable energy generation facilities on a single site. An example of this is found at the Wild Horse Wind Power Project in Washington. The wind energy facility owner is a utility subject to the state's Renewable Portfolio Standards. The facility occupies over 6,000 acres on which are placed only 121 turbines. Because wind turbines occupy a vertical plane and solar panels a horizontal plane, there was room for the two technologies to compatibly occupy the same acreage. Both share transmission facilities, reducing capital facility costs. The environmental impacts for both the solar and wind facilities were constrained to the same site, resulting in a more expeditious and less obvious environmental review process.

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Chapter Seven
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Financing a Solar Project—

Morten Lund, Stephen C. Hall, Howard E. Susman

I. Today's Uncertain Environment. The worldwide credit crunch and economic downturn have had a significant impact on the ability to obtain financing for many solar development projects in the United States. Among the consequences of these global economic events has been a decrease in the pool of financial institutions and intermediaries interested in purchasing pass-through tax credits, such as the federal investment tax credit for solar projects (also referred to in this chapter as the federal "Energy Credit"), and other tax benefits available from solar projects, such as accelerated depreciation. This has made it very difficult for many otherwise viable projects to obtain tax equity financing. Potentially countering this trend, at least in part, is the reduction in the cost per installed watt of panel based solar photovoltaic ("PV") projects. To the extent these cost reductions remain in existence, it potentially causes a dramatic change in the financial evaluation of solar PV projects. If the cost reduction trends also emerge in concentrated solar technologies that may have a technology advantage for some utility-scale solar developments, the positive aspects of this trend will expand.

The impact on financing of percentage of cost based incentives, such as the federal investment tax credit and accelerated depreciation (*i.e.,* 30% of cost is the same regardless of whether it is a higher cost or a lower cost) should remain relatively unchanged. (See Chapter 8 for more specific details on federal and state tax incentives.) However, power sales revenues go up as a percentage of the cost of the project as the overall cost comes down. Although, as mentioned above, it is presently uncertain how low solar costs may go and for how long these reductions may remain in effect, revenue based fee changes should now have a greater place in determining a project's economic viability. A higher relative level of revenue to cost may make debt financing a more attractive option than it has been for solar projects. In addition, solar energy is very well placed for many utilities' time-of-day pricing mechanisms, where electricity delivered during the peak hours of the day during the peak seasons automatically receives a higher purchase price. In addition, some states are experimenting with specific programs to provide at least some level of feed-in tariff pricing support for a defined capacity of project development. The feed-in tariff rates typically being approved are significantly higher than standard market rates and substantially higher than avoided cost pricing, although as noted the capacity qualifying for these experimental programs tends to be relatively limited.

Consequently, writing this in early fall 2009, we are in a period of uncertainty and temporary measures with respect to the financing of solar projects. Measures such as the option to elect a cash grant in lieu of the federal investment tax credit assist liquidity, but this program expires December 31, 2010 (except for certain carryovers available if the required percentage of expenditures are incurred prior to December 31, 2010). On the other hand, the availability of the cash grant option may or may not make it more difficult to monetize the value of accelerated depreciation. It all depends upon whether a market for such depreciation benefits develops. Reduced cost per installed watt moves the solar market closer to the goal of "grid parity." However, although the overall amount of capital required to finance a solar project has gone down, these more cost effective projects are still in competition with many other potential investments in a market where a broad cross-section of industries are having difficulty finding necessary capital.

We will discuss many of the financing approaches that have been used in the past in recognition that the capital markets may return to more historical norms. In addition, we will mention some of the approaches that are being considered to respond to current conditions. However, on an overall basis, obtaining financing for solar development is likely to remain challenging in the short run and a work in process with a significant degree of uncertainty as to how financing options will look and work over the middle and longer term.

II. Some Things Remain the Same. A power purchase agreement for the output of a distributed generation solar PV or utility-scale project regardless of technology is a necessary component of each transaction and will be an important consideration for any source of financing. However, the revenue generation potential of a solar facility is not the only consideration to make a project financeable. Thus a "bad" power purchase agreement may make it impossible to obtain financing.

As mentioned above, historically the relatively less important role of project revenues highlighted the fact that solar installations were primarily tax-advantaged investments, just as low-income housing, historical preservation credits, new market tax credits, and other tax subsidies have made other types of tax-advantaged projects popular focuses of development and industries dedicated to those specific types of projects over the past 25 years. The federal investment tax credit for solar projects and accelerated depreciation have been very significant drivers for the financing of distributed generation solar PV projects where the creditworthiness of the power purchaser might not be as strong as that of a utility buying the output of a utility-scale project. (See Chapter 8). Equally significant, however, is the availability of Renewable Energy Certificates, referred to as "RECs" or "green tags" (see Chapter 9), and state-level subsidies, state tax credits, and other forms of incentives available to support solar PV projects.

III. The Role of Federal Tax Benefits in the Financing of Solar Projects. There is no question that historically many solar projects would not have been built if there were not substantial federal tax benefits available. This is likely to remain the situation unless and until it is proven that the installed cost per watt of solar projects will remain at or below "grid parity" and power sales revenues alone will be able to support the financing of these projects. Absent these tax incentives, the intrinsic cost structure of these projects and the generally constrained prices at which output can be sold probably still do not make them economically viable sources of generation on a standalone basis under existing market conditions. Tax benefits are likely to remain a principal driving force behind solar development for some time. Consequently, it is helpful to look at just how difficult it is to do the federal tax analysis of a solar facility. The answer is, as to some tax issues, not very, and as to other tax considerations, fairly difficult. (See Chapter 8 for a fuller discussion of the technical aspects of these federal and state tax incentives.)

Most financing sources have three basic questions relating to the tax benefits and other economic aspects of the transaction. First, how much? Second, how certain? Third, when? These questions reflect the financing sources' primary concerns in deciding whether to invest. One primary concern is being able to put on a spreadsheet the expected economic return from the project based on a combination of tax benefits, power sales revenues, and other revenues (such as from the sale of RECs), state tax credits, or special program payments (such as from the California Solar Initiative ("CSI")). A second primary concern is the risk analysis of the project, in particular, how certain it is that the benefits reflected on the spreadsheet will actually be realized. A third primary concern is when the expected benefits will become available. In part, this reflects the various midyear and other conventions under the Internal Revenue Code, which provide that the amount of certain specific tax benefits at the end of the tax year depends on when during the tax year those benefits became vested, such as half-year conventions regarding depreciation deductions. However, the timing question takes on added significance when there are questions about when and if a key tax component of the transaction, such as the federal Energy Credit, is set to expire in the near future. Then the financing source may become concerned about whether the project can be physically completed before the end of the current authority, and what economic risk mitigation must be built into the terms of the financing to protect the financing source if the project does not reach the "magic date" before the credit expires. In terms of federal tax issues, the magic date is the "placed in service" date, which may or may not be the same as the "commercial operation date" or "final completion date," which are critical dates in the power purchase agreement and the installation agreement.

IV. How Much and How Certain? The discussion in Chapter 8 sets out the components of a solar project that will qualify for federal tax credits. Most states with a state tax credit program utilize these same federal qualifying costs. There is not much question regarding the certainty of receiving these tax credits if a competent analysis of qualifying costs has been done before claiming them, or applying for them in the case of the cash in lieu of credits program and most state programs using a cost based methodology.

V. Timing. The analysis of when during a tax year the federal tax benefits will become available is difficult because it must take into account factors that tend to be beyond the control of the developer or the financing source. There are many questions complicating this determination. Will the panel manufacturer be able to meet the requested delivery schedule? Is there sufficient time to reasonably expect that the installation will be placed in service before a significant deadline passes (such as the expiration of the current cash in lieu of credits program, whether that expiration date is likely to be extended, and if it is, when the law extending it will be passed and go into effect)? Will the installer run into adverse weather conditions, a labor dispute, an inability to get the required materials because it was waiting for a better price to increase its margin, or any of the other well-known construction risks?

Consequently, although the financing source will find it necessary to make an estimate of when tax benefits will become available, the developer can expect a constant stream of requests for updates and status reports as the financing source attempts to stay on top of its risk position. This is one of the reasons many tax investors will refuse to provide construction financing. They are only interested in the tax benefits when there is a very high probability they will actually be available on or before a date certain. These financing sources do not want to bear construction risk or have these risks impact their anticipated return on the transaction.

VI. The Role of Project Revenues in Financing a Solar Project. As noted briefly above, historically project revenues were not a primary driver of the economics of a solar installation. However, they were important because they provided the gap filler between (1) the financing source's return from tax benefits and other revenue sources, such as RECs, and (2) the investor's desired overall return on the project. Another way of saying this is that the tax benefits, subsidies, and other revenues were not sufficient to provide a return that was acceptable to financing sources. Project revenues were the only means of bridging that gap because they were the only source of funds that were not subject to defined legal restrictions as to either the method of calculation or the overall eligible amount of funding. Whether project revenues would be sufficient to fulfill that role has always been difficult to project because the price at which any specific buyer for a project's output was willing to buy was dependent on a wide variety of factors completely separate and independent from the actual costs of the project.

In particular circumstances, project revenues are now likely to play a more primary role in the economics of a project. The availability of certain utility tariff changes such as time-of-day pricing and experimental feed-in tariff programs should be looked at closely in assessing the long-term economics of a project. The generation characteristics of solar fit well with many common classifications of "On-Peak" delivery, allowing a significant multiplier to the price of the electricity delivered to a utility. If the usage at a particular residential or commercial site allows excess generation during these "On-Peak" hours, a net-metered distributed generation solar PV site could realize these additional benefits for the facility owner. For utility-scale installations and "qualified facilities" selling to utilities, an emerging trend of state public utility commissions allowing differential "avoided cost" calculation methodologies for renewable energy resources means that the price for electricity under an "avoided cost" tariff may be higher than would otherwise be available. This could be particularly true for areas of the country where an aggregated "avoided cost" price takes into account significant amounts of electricity generated by very low-cost sources such as hydroelectric. In addition, the need for large quantities of RECs to meet compliance standards under a specific state's renewable portfolio standards that have carve-outs for specific generation sources such as solar should also be expected to have a positive impact on the price of electricity being purchased by a utility from a solar or other renewable generation source.

For facilities that are not going to be negotiating with regulated public utilities, particularly distributed generation solar PV, the first touchstone for attempting to predict the range in which output from a specific solar PV facility can be sold is still likely to be the current market rate for electricity in that location. The second touchstone should continue to be the local utility's recent record on rate increases. The third touchstone is even more likely to be whether there are time-of-day, "solar-friendly," or other tariff adjustments the local utility has made or has publicly announced it intends to make in the near future that raise the consumers' perception of what grid delivered electricity is likely to cost them in the future. It is very clear from these touchstones that a major driver in determining the sale price of output from a specific solar PV facility will continue to be its competition, the cost of electricity delivered by the local utility.

Many believe that in light of global warming concerns and other environmental factors, the cost of solar power should not be dependent on any competitive price from a local "dinosaur" utility. In our experience, the actual purchaser of solar PV output still rarely feels this way. Although the decision to acquire a distributed generation solar PV installation may take into consideration environmental benefits, it also has a substantial economic component. Purchasers have been willing to pay some premium for solar power, but not a disproportionate premium to the cost of buying power from the local utility. We have seen no evidence that this has changed or is changing dramatically, although the general sense that the cost per installed watt is decreasing significantly does seem to be having some impact. In addition, there are certain unknowns regarding the performance, maintenance, and longevity of any specific installation that continue to weigh into the calculation of whether it is "worth it" to have a solar installation on-site or whether to take the easy route, which is to just flip the switch and take delivery from the local utility. One thing that must be conceded is that, in America, our local utilities continue to be very good at maintaining a ready flow of electricity, available at the customer's demand.

Therefore, the financing source's three questions—how much, how certain, and when—cannot be fully settled until there is a negotiated and signed power purchase agreement. This is a major reason why, before seriously considering an investment in the project, most financing sources will want to see the terms of the power purchase agreement and will want to know that the power purchaser is creditworthy and has agreed to the price structure over the term of the power purchase agreement and to damages due upon a breach.

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VII. The Role of Other Revenues in the Financing of a Solar Project. After federal tax benefits, and now potentially revenues, another primary driver of solar economics is the other sources of cash or economic benefits available to the project. As previously mentioned, historically solar projects needed to be heavily subsidized to be economically viable. The cost per watt of a solar PV project, in particular, has been significantly higher than that of other renewable generation sources. In part, this was because of the higher costs of the basic components, primarily solar panels, and, in part, it was a consequence of the relatively limited output capacity of the current solar panels. Major changes have occurred in the availability of solar panels and panel components, such as polysilicon, and significant efficiency increases may be coming. So the equation has changed in some parts and has not changed in other parts. Consequently, on an overall basis, the need for subsidies to make solar generation projects economically viable remains high and the importance of "other revenue sources" remains high.

These "other revenue sources" take a variety of forms and are determined on a state-by-state basis. Some states, such as Oregon, Hawaii, North Carolina, and New Mexico, have chosen to offer a state income tax credit based on the cost of qualifying renewable equipment. There have been efforts in some of these states to make these tax credits "refundable" in cash, much like the cash in lieu of credits federal program. Some have been successful, some have not. (See Chapter 8 for additional information about state-level subsidy programs.) Other states, such as California, chose to implement a direct payment subsidy system (the CSI). Again, how the program is structured makes all the difference in how useful it will be in practice. The CSI program provides a decreasing level of direct cash subsidy as commitments for solar projects are made and applications for CSI payments are submitted to the state. Sufficient applications have been submitted to drive the subsidy level far down from its initial level. However, the CSI program also has offsetting benefits regarding items such as the ability to designate a party other than the owner of the facility as the recipient of the subsidy payments.

Other revenue sources include the wide variety of grants and subsidized loans that are being made available for renewable resource generation projects by states, federal agencies, and local-level environmental organizations. Using Oregon as an example, the local-level Energy Trust of Oregon makes grants for the initial development efforts related to renewable projects. The typical grant is not sufficient to pay for a major portion of the project but does make it possible to get through some of the planning, design, and initial power purchase agreement phases necessary to put together a package that potential investors will take seriously. However, these subsidized sources of financing have consequences for the federal tax analysis of the project.

An additional source of other revenue is the sale of RECs, which are discussed in Chapter 9.

At the end of the day, the financing source is going to again ask the three questions as to the other revenue or economic benefit sources for the project. The financing source may be willing to be flexible on when signed commitments from these sources become available, but the deadline will certainly be before closing and usually before the execution of a firm commitment to fund the project.

VIII. The Interaction of Federal Tax Benefits, Project Revenues, and Other Revenue Sources in Financing a Solar Project. In today's environment, the final conclusion of whether or not a specific project is financeable continues to depend on the firmness and level of each of the three factors discussed above. Neither the federal tax benefits alone, the project revenues alone, nor the other revenue or economic benefit sources alone are sufficient to make the project economically viable, and consequently financeable. Even though the reduction in cost per installed watt of some solar PV projects, particularly if combined with the ability to locate a project in an area where power sales revenue enhancements can be realized, should provide the economic viability for solar projects with some additional margin, there is no room for any one of these three factors to be significantly depressed if a project is going to receive financing. A very low power price to accommodate the purchaser may still push the project below the acceptable economic return threshold. In states using a tax credit state-level subsidy mechanism, the failure to have adopted recent changes in federal law may result in a significant decrease in available state tax benefits if governmentally provided grants and loans are received, even though these no longer cause a reduction in the federal Energy Credit. An inability to receive sufficient revenues from the sale of RECs or an inability to realize any monetary benefit from accelerated depreciation when the cash in lieu of credits program is utilized may do so as well.

These three factors exist independent of each other, but must be viewed in combination to determine whether the project is economically viable. Each must meet the financing source's scrutiny on its own, and then must also meet that test in the aggregate with all of the three factors considered together. Although a continuing reduction in the cost per watt of solar energy is highly likely to have significant effects on this analysis, it is still somewhat too early to determine exactly what these impacts will be and how general or localized they will prove to be. A problem in one area of the project's economic performance is still unlikely to overcome performance above historical expectations in other areas. These remain difficult projects to make "pencil out" to an acceptable return level for financing sources.

IX. So, Whom Should You Be Approaching for Financing? The availability of financing for distributed generation solar PV projects took a dramatic downturn in the late summer and early fall of 2008. This downturn was caused by a number of well-known factors coming together in a very short period of time and was not limited to the solar PV industry alone. It is unclear how these changes in the financial market will affect utility-scale projects. These adverse factors appear to remain in play, and we are hearing that many commercial building distributed generation solar PV projects continue to have problems obtaining financing, although some significant projects are getting done. Given the longer lead time required to bring utility-scale solar projects through predevelopment, there is not enough data currently available to determine whether utility-scale projects are also going to have the same degree of difficulty obtaining financing. There are a fairly large number of publicly announced power purchase agreements for projects of 100 MW and above, so it should be relatively easy to track whether these projects are moving smoothly through the predevelopment and development process in the coming year. However, from the information that has been shared at seminars or disseminated in public releases, certain factors that were important for obtaining financing in early 2008 appear to still be important.

Among the factors with continuing importance, size of the project appears to be toward the top of the list. The process of putting together a commercial or utility-scale solar project of any size continues to be extremely time-consuming. They are complex, sometimes overly complex, transactions where even small facts can change the qualification for the tax benefits needed for economic viability. Some legislative changes intended to make this easier have been enacted at the federal level, but not all states that follow the federal tax model have adopted corresponding legislation removing these issues at the state level. Substantial upfront time is required for projects that are subject to regulatory and environmental compliance processes, which includes any projects that intend to sell output to regulated utilities or are located on significantly sized sensitive ecological areas. In addition, potential financing sources will want to do substantial due diligence on a project they are considering funding, which requires a substantial commitment of time and internal resources. All of these considerations combine to make many potential financing sources believe that it is more cost-effective to consider financing one large project rather than a number of smaller projects.

"Big" projects, probably on a scale of several megawatts or greater, should continue to have relatively better access to large investment banks and private equity capital sources of financing than do developers of commercial scale rooftop distributed generation solar PV projects. The economic value of the federal tax credits generated by very large projects makes them attractive to funds that provide high-income-generating entities with tax credits and losses to apply against their other taxable income. However, the general economic picture can influence the appetite of these financing sources for any particular tax year, sometimes in unforeseen ways.

Based on the limited information publicly available, "middle-level" projects may continue to face a difficult financing environment for some period of time. They do not have the scale to attract large investors on a stand-alone basis but (unless installed costs per watt continue to decline) are too expensive to be financed solely through subsidized sources. Banks are increasingly becoming interested in looking at renewable energy generation, including solar, as new business opportunities. However, federal banking regulatory issues may operate to discourage some banks from taking an investment equity position in the project entity. In other words, banks are concerned that they cannot become the tax investor without crossing the lines governing their banking operations. Many banks do have subsidiaries and related entities that can make investments not subject to the "basic" banking regulations. The ability to make these investments usually requires that some distinct facts apply, such as the project being in a recognized economically disadvantaged area. In addition, some banks may be interested in purchasing the federal Energy Credits but not the accelerated depreciation generated by a project. The Energy Credit reduces taxes dollar for dollar. The accelerated depreciation reduces earnings, something many banks currently want to avoid given the current impact on banks of commercial real estate and subprime mortgage problems in the economy. Private equity firms and smaller investment banks may have some increasing interest in projects of this size, but if potential returns are thinner than potential returns of other investments opportunities that may arise if the economy recovers, these financing sources may remain on the sidelines to a greater or lesser extent.

We speculated a year ago that "smaller" projects, and some midsize projects, would be likely to go one of three ways. They would have access to financing through some local source of capital established specifically to encourage the development of solar generating resources in their geographic area; they could approach one of the number of funds being established that would do the entire project on a turn-key basis, including equity financing; or they would access some form of owner financing. A fourth option has arisen during the past year: a larger company doing a number of smaller projects with a line of credit or similar rolling credit facility made available based on the strength of the company rather than on a project-by-project basis. For those companies that have been able to meet their lenders' requirements for this type of line, this has been a successful approach to financing a series of smaller installations.

Although the local capital source avenue may be active in some parts of the country, as a general rule we are not aware that this approach has turned out to be a consistent or significant source of financing for smaller commercial projects. The larger fund approach has also not demonstrated a strong market presence outside of the vertically integrated situation where the funds' financing is being used for projects that are sponsored or being developed by affiliated members of the same business group. This approach continues to use a trade-off for the power purchaser, requiring acceptance of a one-size-fits-all and take-it-or-leave-it approach to avoid the large commitment of upfront time, effort, and cost typical for putting together any solar project—regardless of size. Depending on the power purchaser's and building or site owner's (the "host") interests, it may or may not be a good trade-off. The owner financing approach will usually involve an established business with an owner or executives who have personal ties to high-net-worth individuals in the community. This group will put together a private investment vehicle geared to take advantage of the tax and other economic benefits available from the project. (In the context of technology venture capital, this is usually referred to as "angel investor" financing.) This approach has been used with some success but is necessarily of limited availability. A variation of this approach has also been coming up from time to time: installer financing. We have seen this most often when a solar installer has affiliated companies that can take advantage of the tax benefits generated by a specific project. However, again this is an opportunity of limited availability since considering its use depends upon very specific facts and circumstances.

One factor likely to influence whether local banks become more active in this market is whether tax advisors become comfortable with the IRS's recent pronouncement in Revenue Procedure 2007-65 and the changes contained in Announcement 2009-65. These authorities created a specific safe harbor defining when the IRS will recognize the validity of a "flip" transaction structure involving wind projects (although there continues to be debate in the tax community as to whether the safe harbor established goes beyond wind transactions to solar and other renewable transactions). Flip structures are frequently used for two primary purposes. First, they allow the easier withdrawal of tax equity investors after their investment goals have been realized and the tax benefits available from a particular project have been exhausted. Second, they provide the developer the opportunity to realize a return from the stream of power sales revenues later in the term of the power purchase agreement. A number of variations are being discussed that involve changes in the interest percentage allocations of members (or limited partners) in the project-owning entity during its existence. In general, all of these variations are intended to obtain the objectives described above. One of the changes contained in Announcement 2009-65 is the allowance of a back-end purchase option in the power purchaser that is defined at the start of the transaction. This change will allow a much higher degree of certainty regarding the economics of the exercise of a purchase option and will allow the economics of the transactions to be modeled with a much higher degree of clarity. This added clarity may make financial institutions more comfortable with the economics of a solar project over its life and especially in terms of what happens if a purchase option is exercised relatively early in the life of the power purchase agreement.

X. What Terms Can I Expect to See in the Financing Documents? In addition to the standard terms typical in any financing, there are certain provisions that have been more or less unique to solar financing. These relate to occurrences during the Energy Credit recapture period, the allocation of risk upon the occurrence of certain events, and how the price for any purchase option is calculated.

The federal Energy Credit has a recapture period of five years after the facility is placed in service. Many documents in solar transactions will draw a bright line at the fifth anniversary after the placed-in-service date, providing that certain terms apply before the fifth anniversary date and other terms apply after the fifth anniversary date. However, if only a partial year of accelerated depreciation is available in the first year, the full federal tax benefits are not used up until about the 5.5-year mark. Consequently, many documents now provide that the benchmark for the shift in terms is the sixth anniversary of the placed-in-service date. This can become more complicated if the project has been placed-in-service in component pieces capable of independent operation, but the result is that the benchmark date will be measured from the placed in service date of the final piece.

Other consequences of the potential for projects to be placed in service in parts smaller than the full intended installation are discussed in Chapter 3.

Allocation-of-risk provisions in solar transactions are different because the potential events that can cause an economic loss for the project owner are fairly unique in the universe of tax-advantaged investments, and because of the complicated role that the interaction of tax credits, project revenues, and other sources plays in the economic viability of the project. For example, federal Energy Credits vest upon the project's being placed in service. So long as the project exists and has not been abandoned or been used for other than its intended purpose of generating electricity, there is no recapture. In many situations this can be true even if the facility is not actually generating electricity for some period of time. Project revenues and other sources of revenues or economic benefit, however, typically are measured by the actual output of the facility. If it is not producing electricity or there is a reduction in the production of electricity, there is a reduction in the available amount of these economically important items. Because all three items are important for the investor to recover its return, a negative impact on any of the three has a negative impact on the entire project's viability.

Numerous events can occur that may negatively impact project revenues or other sources of revenue or economic benefit. For example, suppose the building owner needs to repair the roof area where the solar installation is located. It is likely that the installation will have to be moved aside or even removed from the roof for some period of time. During that period there will be no output, so there will be no power sales or RECs generated to fulfill any REC sales contracts. In addition, there is the actual cost of moving or removing the facility from the rooftop. Someone will bear these real costs; the purpose of the risk allocation provisions is to define who that is. Similarly, if the purchaser simply decides to stop buying the output of the facility, the economic loss is not just the lost revenue from the sale of electricity. The loss calculation must also take into account any other revenue sources that depend on the facility actually generating and delivering electricity.

In some states where net-metering regulations allow the pass-through of "excess" generated output to the local utility, there may be a means of mitigating these risks without allocating them between the project owner and the power purchaser or the host. To determine whether this is even a viable alternative, though, requires a careful examination of the net-metering rules applicable to the specific local utility that owns the grid meter for the project. Some states allow or require the local utility to buy the excess output from the facility at market rates or avoided cost (which is less than market rate). Some states may allow the local utility to decide whether it wants to allow that "sale" rather than making it mandatory; some states may provide that any excess generation from the solar facility simply creates a credit for the purchaser ("making the meter run backward") but does not allow that credit to be monetized. In those states, the local utility does not have to pay anything for the excess electricity delivered to it through the meter. At the end of the year there is a true-up, and if the purchaser has a credit on its side of the ledger, that credit goes away and the meter is effectively reset to zero for the new year. The investor has a very legitimate interest in how this will play out because it has a direct impact on the investor's risk profile.

In the absence of any net metering "out," the documents are likely to provide that after the operation of the facility is disrupted due to causes within the control or responsibility of the purchaser or the host for some negotiated period of time (for example, seven days each calendar year), either the purchaser or the host becomes responsible for paying the project owner the full economic cost of lost revenues. This includes the lost revenues from electricity sales, as well as any lost revenues or subsidies from local tax credits, REC sales, etc. In addition, some REC sales contracts have a provision requiring the project owner to reimburse the REC purchaser for the failure to deliver a certain level of RECs during each year of the contract. If the disruption of generation would trigger this cost to the project owner, it is likely that the project owner will want to pass that cost through to the purchaser or the host.

There are also risks present in rooftop distributed generation solar PV projects arising directly from the fact they are located on top of buildings, and risks exist for ground-mounted solar installations where the ground is condemned, partitioned, subdivided, etc. Suppose the building roof has not been well maintained and can no longer bear the weight of the solar installation. Local law may require that it be removed. The project owner will want the host to pay the related costs, including lost revenues, lost REC sales, costs of removing the installation, etc. A similar potential problem arises if the building is sold and a new owner does not want to have the solar installation on its roof, or tenants change and the new tenant does not want to agree to the same power purchase agreement terms as the former tenant. Each of these possibilities needs to be considered, and some means of removing the risk or mitigating the potential damages to be incurred by the project owner should be built into the documents.

XI. Dealing with Purchase Option Pricing. One unique aspect of solar generation installations is that many project power purchasers want to own the installation themselves at some point. This has been a common feature of distributed generation solar PV power purchase agreements for some time, particularly where the site host is also the power purchaser. More recently, many utility scale power purchase agreements appear to be including these purchase rights on behalf of the power purchaser. They have read the public news stating that solar installations appear to have a useful life based upon the track record of earlier solar PV installations. It appears that the power purchasers view these installations as a hedge against dramatic increases in the market rate of power and wish to acquire the installations at what they believe will be a more affordable cost after the tax benefits have been exhausted.

For those purchasers and hosts who are strongly committed to one day owning the installation on their property, the timing and price of their purchase option is an important consideration in being willing to enter into the transaction. The publication of Announcement 2009-65, mentioned above, may prove very useful in resolving one of the problems that have arisen in many power purchase agreements with respect to the purchase option. Under the guidelines set out in Revenue Procedure 2007-65, the purchase option could not be less than the fair market value of the installation at the time the purchase option is exercised. This lingering uncertainty as to what the fair market value would be in the future caused a number of potential power purchasers to back away from a transaction they were considering. The changes under Announcement 2009-65 now allow the purchase option price to be determined at the time the power purchase agreements is entered into, provided it is a reasonable approximation of what fair market value is expected to be at the time of exercise.

There is always disagreement and debate regarding how to determine the fair market value of an installation at any particular point in time. Whether a particular approach is more or less appropriate in a particular situation usually depends upon the facts of the specific case. For example, one approach is to (i) obtain an appraisal of the value of the equipment in a secondary market; (ii) add the discounted present value of power and REC sales that the project could expect for the remainder of the term of the power purchase agreement; and (iii) deduct the cost of removing the installation from its present location and restoring the site to the required condition. This approach may prove difficult to apply in connection with a solar installation since there is not an active secondary market for solar equipment at the present time and the discounted present value of the remaining term of a power purchase agreement is questionable when the party that is buying power under the power purchase agreement is the same party that will be buying the installation.

A second approach ignores the remaining cash flow from the project and stipulates that only the value of the equipment itself (again, with or without removal costs) is relevant in determining the fair market value of the project. This particular approach is clearly relevant when the purchase option is exercisable only at the end of the power purchase agreement term when there is no expected remaining stream of revenues; however, it is also one that can only truly be accurate at some time in the future. In the absence of an active secondary market for used solar equipment, there are not benchmarks existing today regarding what the value of the used equipment might be 10, 15, or 20 years in the future. The changes in value of used computer equipment over the years are a warning with respect to trying to accurately forecast the future value of equipment that may be subject to significant technological change and improvement over time.

A third approach provides for a valuation of the equipment and a discounting of the remaining cash flows from the project, and includes a designated "buyout price" determined at the time the power purchase agreement is entered into, which is the "greater of" the equipment and cash flow amounts plus designated buyout price or fair market value. This approach has the advantage of at least establishing a floor option price since the buyout price establishes the minimum potential option price even if the equipment and cash flows have no value. However, it does not solve the problem of power purchasers who are uncomfortable that the option exercise price might be much higher than they had expected.

By allowing the option price to be set up front, Announcement 2009-65 recognizes problems caused by having to wait for a period of years until the option price can be determined. What this change appears to actually do is open the door for using any reasonable method of predicting future values that will pass a reasonable and credible test. For example, one approach to pricing the remaining value of a power purchase agreements may be to determine what the cost savings on a per-watt basis is between the price under the power purchase agreements and the estimated market value of electricity during the term of the power purchase agreements following the purchase option exercise. This cost savings approach could be considered to approximate the value to the power purchaser of exercising the option. Using the historical data of utility market price increases for electricity over the past 10 years prior to execution of the power purchase agreements, weighting the more recent years more heavily, might be considered a "reasonable" approach to determine this future value. Discounting that savings stream from the end of the power purchase agreements term back to the time of exercise of the purchase option should provide some approximation of the value to the power purchaser of exercising the option. Perhaps this equates to the fair market value of the project, at least to the purchaser, as of the time the purchase option is exercised. The fact that these thoughts represent conjecture and hypothetical analysis demonstrates that much more thought needs to be given to how to estimate fair market value under the Announcement 2009-65 approach. Determining fair market value is still not a clean and clear determination, even though it can now be done up front.

There is an equal lack of clarity in how power purchase agreements determine when the purchase option can be exercised. Revenue Procedure 2007-65 provides that the IRS does not want to see any purchase option exercisable during the first five years, equivalent to the recapture period discussed above. This portion of the safe harbor guidelines was *not* changed by Announcement 2009-65. Most participants accept this as a reasonable threshold. After the five- (or six-) year period, however, the dates are all across the board. Some power purchase agreements provide that the purchase option may be exercised any time after the threshold date. Some agreements provide that the purchase option may only be exercised after the investor has received a specific target rate of return, whenever that happens. Some agreements provide that the purchase option may only be exercised on the 10th, 15th, and 20th anniversaries of the facility's delivering output, with the 20th year equaling the end of the term of the power purchase agreement. Some agreements provide that the purchase option can only be exercised upon the expiration of the power purchase agreement. What timing is available to the party who wants to have a purchase option depends, to some extent, on how the investor views its position. If the target return for the investor requires that it realize all of the available tax benefits, all of the projected power sales, and all of the revenues or economic benefits available from other sources, then the exercise of a purchase option is going to defeat the investor's realization of its desired return unless the purchase option price includes something to "make the investor whole" on these items. If the target return can be realized without all of these items, then there will likely be more flexibility in how the purchase option price is determined. The major point here is that there is currently no single clear market standard on this issue.

XII. Summary. Determining whether a particular proposed solar installation will be financeable requires quantifying a variety of interrelated and moving parts. In this respect, the financing of solar is not particularly different from the financing of many other types of investments. What makes solar somewhat different is the nature and character of some of these parts and the current situation in which there is not much room for offsetting a problem in one area of the project with headroom in another area. Except for the situation in which a distributed generation solar PV installation will be put on a building owned by a power purchaser that is willing to basically finance the project itself and take all of the tax benefits for its own use, this is not a "do-it-yourself" type of project.

Chapter Eight
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Tax Issues—

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The tax system often is used to provide incentives for particular types of investments the government wants to encourage. These incentives raise tax planning issues that go well beyond those involved in general structural, choice-of-entity, and other financing considerations, and create the potential for significant economic benefit. The available incentives also have been subject to frequent changes as federal and state energy policies have evolved. The following discussion is only a general summary and is current as of the date shown above. Please contact one of the attorneys listed above for answers to your specific legal questions and to check on any changes that may have occurred since the date of this publication.

I. Federal Income Tax Issues.

A. The Investment Tax Credit. The owner of a qualified solar facility may claim the investment tax credit (the "ITC"). The ITC is a one-time credit against income tax that is based on the amount invested in a facility rather than on the amount of electricity produced and sold. The amount of the ITC for a qualified solar facility that is placed in service before January 1, 2017 is 30% of the tax basis (generally the cost) of the qualifying property. The amount of the ITC for a solar facility that is placed in service on or after January 1, 2017 is 10% of the tax basis of the qualifying property.

1. **Requirements for Claiming the ITC.** The ITC applies only to "energy property," which is defined for purposes of a solar facility to include only property that meets the following requirements:

a. **Solar Equipment.** The property must be equipment that uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat. In addition, equipment that uses solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight may qualify for the ITC, but only with respect to periods ending before January 1, 2017. Property used to generate energy for the purposes of heating a swimming pool does not qualify for the ITC.

b. **First Use or Construction by Taxpayer.** If the property is acquired by purchase, the original use of the property must commence with the taxpayer claiming the credit. Otherwise, the property must be constructed, reconstructed, or erected by the taxpayer claiming the credit.

c. **Depreciable or Amortizable.** The property must be eligible for depreciation or amortization deductions for federal income tax purposes.

d. **Performance and Quality Standards.** The property must meet any applicable performance and quality standards prescribed by the Secretary of the Treasury. To date, the Secretary has not prescribed any such standards.

e. **Public Utility Property.** Under prior law, the property could not be "public utility property," as defined in section 46(f)(5) of the Code as in effect on the day before the date of enactment of the Revenue Reconciliation Act of 1990. Under recent legislation, this restriction generally was removed for property placed in service after February 13, 2008 (and for self-constructed property, to the extent of the basis attributable to the period after February 13, 2008).

2. **Progress Expenditure Rules.** In certain circumstances involving qualified energy property with a normal construction period of more than two years, a taxpayer may be entitled to claim the ITC with respect to progress expenditures in tax years before the property is placed in service.

3. **Basis Reduction.** The tax basis of property with respect to which the ITC is claimed is reduced for all tax purposes (including depreciation and calculating gain from a sale) by one-half of the amount of the credit. Thus, the tax basis of the qualifying components of a solar facility with respect to which the ITC is claimed generally will be 85% of the cost of those components.

4. **Recapture of the Credit.** The ITC is subject to recapture if, within five years after a facility is placed in service, the taxpayer sells or otherwise disposes of the energy property or stops using it in a manner that qualifies for the credit. The amount of recapture depends on when during the five-year period the property is disposed of or ceases to be used in a qualifying manner.

5. **No Cutback for Government Financing.** Under prior law, the ITC for a solar project generally was reduced with respect to facilities that were financed in whole or in part with the proceeds of tax-exempt bonds, subsidized energy financing, or other forms of government-supported financing. Under recent legislation, this restriction generally was removed for property placed in service after December 31, 2008 (and for self-constructed property, to the extent of the basis attributable to the period after December 31, 2008).

6. **Nonrefundable Credit.** The ITC is a nonrefundable credit. If a taxpayer entitled to the ITC does not have sufficient income tax liability to use the entire credit for a particular year, the taxpayer is not entitled to a refund of federal income tax on account of the credit. Any unused portion of the credit generally may be carried first back one tax year and then forward 20 tax years from the year the credit arose.

7. **Sunset Date.** To qualify for the 30% ITC, a facility must be placed in service before January 1, 2017. There is no sunset date for the 10% ITC for solar facilities.

B. **U.S. Treasury Department Grants.** The American Recovery and Reinvestment Act of 2009 allows the owner of a qualified solar facility that is eligible for the ITC to elect to receive a grant from the U.S. Treasury Department in lieu of claiming the ITC with respect to the facility. The grant generally is designed to function in the same manner as the ITC for which the owner of a qualified project otherwise would have been eligible.

1. **Qualification for Grant.** To qualify for a grant, a solar project must (i) meet the qualification requirements for the ITC and (ii) be placed in service during 2009 or 2010 or, if construction is begun in 2009 or 2010, be placed in service on or before January 1, 2017.

2. **Amount of Grant.** Like the ITC, the amount of the grant generally is 30 percent of the tax basis (generally the cost) of qualifying property.

3. **Excluded from Income.** A grant generally is not included in the taxable income of the recipient. An exception exists for certain lease transactions.

4. **Basis Reduction.** The tax basis of the property is reduced by one-half of the amount of the grant, in the same manner as if the ITC were claimed.

5. **Recapture.** A grant generally is subject to recapture if, within five years after a facility is placed in service, the recipient stops using it in a manner that qualifies for the grant or sells or otherwise disposes of the property to a person who would not have been eligible for the grant if that person had originally placed the property in service.

6. **No ITC Allowed.** No ITC may be claimed with respect to property for which a grant has been claimed.

7. **Timing of Payment.** The U.S. Treasury Department is required to pay a grant to a qualifying project owner within 60 days after the date the project owner applies for payment or the date the facility is placed in service, whichever is later.

8. **Application Deadline.** An application for the grant must be filed before October 1, 2011.

C. **Bonus Depreciation and MACRS Depreciation.** In addition to tax credits or grant payments, solar facilities also can generate significant tax losses that can be quite valuable to owners with other sources of taxable income that can be offset by the losses. These losses result primarily from bonus depreciation and accelerated depreciation deductions under the modified accelerated cost recovery system ("MACRS").

1. **Bonus Depreciation.** An owner of qualifying property placed in service in 2009 is entitled to deduct 50 percent of the adjusted basis of the property in 2009. The remaining 50 percent of the adjusted basis of the property is depreciated over the regular tax depreciation schedule.

2. **MACRS Depreciation.** Qualifying components of a solar facility are also eligible for greatly accelerated depreciation deductions, typically over a five-year period based on the double declining balance method.

D. **Monetizing Federal Income Tax Benefits; Ownership Structuring Issues.** A taxpayer that has little or no need for tax credits or losses (*e.g.,* because it has little or no taxable income) may nevertheless be able to obtain the benefit of various tax incentives by entering into an arrangement with an investor that needs credits, losses, or both. For example, a taxpayer could enter into a partnership with an investor that is willing to contribute cash to help finance a solar facility. The partnership could then operate the facility and, within certain limits, the tax credits and losses could be allocated to the partner having a need for them. In the alternative, a taxpayer could develop a facility, place it in service, sell it to an investor, and then lease it back from the investor. These and other potential techniques for "monetizing" tax credits and losses involve risk and require careful tax planning. These considerations should be taken into account in the very early stages of a project, including when choosing the type of entity that will own a facility and the various financing alternatives available. The grant in lieu of the ITC provides a new financing option for developers of solar facilities to consider. Even developers that opt for the grant, however, may still desire to involve tax-motivated investors to take advantage of the accelerated depreciation and other tax benefits associated with a project. A comparison of the economic benefits of the ITC and the grants requires, among other considerations, careful financial modeling of the projected costs and output of each specific project and of the full array of potential tax and financing implications. This should include careful consideration of any limitations that may apply to a particular owner's ability to claim the available tax benefits, such as alternative minimum tax liability, at-risk limitations, and passive activity limitations.

II. State and Local Tax Issues. In addition to federal income tax issues, construction and operation of solar facilities also raise numerous state and local tax issues that should be carefully examined. Following is a general description of the types of issues that may arise, with selected examples.

A. Net Income Tax States. The vast majority of states impose a net income tax. States generally base their income tax system on the federal system, and many states have adopted relatively uniform rules governing division of the tax base and computation of taxable income. Despite these similarities, however, each state's tax system is different and must be separately analyzed.

1. Nexus, Business Structure, and Apportionment. Siting a solar project in a particular state will create "nexus" with that state and will allow the state to tax the income of the company that owns or operates the project. In addition, less substantial activities, such as consulting in a state, may create nexus.

One of the most important decisions affecting state taxation is the type of legal entity used when starting a new project. Choices may include corporations (including S corporations and C corporations), limited liability companies ("LLCs"), and limited partnerships. The decision can affect:

- Whether tax is imposed directly on the project company or on its owners; and
- Whether taxable income (or loss) is determined on a stand-alone basis or whether state tax will be measured by combining or consolidating the income of affiliates, including the parent company.

States generally measure the taxable income of a company by allocation and apportionment. In western states, including California, Idaho, Montana, and Utah, the company's overall business income from all sources is apportioned to the state based on the company's property, payroll, and sales within the state. However, reflecting a national trend, Oregon's apportionment is now based entirely on sales. For purposes of apportioning sales of electricity among different states, some states, such as California, source the sale based on where the majority of income-producing activity related to the sale occurs. Other states may use different sourcing rules. Oregon, however, takes the position that sales of electricity are sourced to the state where delivery occurs.

The choice-of-entity and apportionment rules can sometimes produce surprising results: if the company or group as a whole has taxable income, the company may owe tax to a state even if the activities in that state are not profitable on a stand-alone basis.

2. Income Tax Incentives. Some income tax states offer incentives to promote the development of solar energy and other alternative energy projects. It is important to understand the nature of each incentive, as there is considerable variation among the states.

a. **Oregon BETC.** For example, Oregon has adopted a business energy tax credit (the "BETC"). The BETC program allows an Oregon taxpayer that owns and operates a solar energy project to claim a credit against Oregon income tax to offset the eligible costs of construction of the project. Legislation passed in 2007 substantially increased the amount of the credit. Under the 2007 law, the amount of the credit is 50 percent of the eligible costs, up to a maximum total credit amount of $10 million (formerly $3.5 million). The total credit amount is claimed over five years, and unused credits may be carried forward for up to eight years. A developer may sell the BETC outright, at a discount established by the state and recalculated quarterly. Certain other incentives, including federal grants, and potentially including the federal grant in lieu of the ITC, may reduce the amount of the BETC. Although the 2009 legislature adopted a bill that would have cut back the BETC for many kinds of projects, the governor vetoed that bill, and the cutbacks did not become law.

b. **Other States.** Hawaii and Montana are examples of other states that offer somewhat similar income tax credits for certain alternative energy systems, including solar systems.

B. **Sales and Use Taxes.** Nearly all of the states impose a sales tax. In most states, the tax is imposed only on sales of tangible personal property. Some states also impose use tax on sales of certain kinds of services. In addition, some states impose a transfer tax on the sale (and sometimes the lease) of real property.

1. **Purchase or Use of Equipment.** Most states' sales and use taxes will apply to the purchase or use of equipment within those states.

2. **Generally No Sales or Use Tax on Sales of Power.** Most states that impose sales and use taxes do not impose those taxes on sales or use of electricity.

3. **Sales Tax Incentives.** Some states, such as Nevada, offer exemptions or other sales and use tax incentives for solar energy facilities. Idaho's 2005 legislature adopted a sales and use tax rebate for certain alternative energy generation equipment, including machinery and equipment used in generating electricity from solar energy. In 2009 Washington revised its sales and use tax incentive for certain alternative energy generation equipment, including machinery and equipment used in generating electricity from solar energy. The incentive is a 100 percent exemption from July 1, 2009 through June 30, 2011 and a 75 percent rebate from July 1, 2011 through June 30, 2013.

C. **Property Tax.** Virtually all states impose property tax that is assessed annually and is measured, in some fashion, by the value of real property. Most states also tax tangible personal property that is used for business purposes. Intangible property is taxable in some states if the owner is centrally assessed, as discussed below.

1. **"Central" or "State" Assessment Likely.** In many western states, such as Oregon, a company that produces electricity is "centrally assessed" for property tax purposes. Central assessment means that the taxable value of the property is determined by the state revenue authority rather than by the county assessor's office. In Washington, central or local assessment depends in part on whether the company's property crosses county lines. In California, the facility's output is a factor in determining whether central assessment applies.

2. **Valuation.** States generally accept the three traditional valuation methods for valuing electricity generation property (the cost approach, income approach, and comparable sales approach). However, if

the property is centrally assessed, the state taxing authority may also be authorized to determine value by combining the property with other facilities owned or used by the same company. In that case, the taxing authority may aggregate property within and without the state, determine the value of the entire "unit," and allocate some portion of the unit value to the taxing state by means of a formula. Determining the correct value of a particular project is a matter of frequent controversy.

3. **Property Tax Reporting.** States typically require owners of centrally assessed property to file annual returns reporting the value of their property. It is good practice to consult a valuation expert before filing the first return with respect to the property, in order to accurately communicate on the return items that could result in tax savings in future years.

4. **Rollback Penalties in Farm and Timber Use Areas.** Many states impose property tax penalties when land that is used for farming or timber is dedicated to a different use. In addition to those penalties, property taxes may increase prospectively after the change of use. It is best to address this issue as part of financial modeling.

5. **Property Tax Incentives.** As part of due diligence in constructing or acquiring a solar facility, it is worthwhile to inquire whether any property tax incentives are available. Property tax incentives can be particularly advantageous because property tax liability typically applies throughout the life of the project. In contrast to income tax, property tax is often highest in the early years before the project is profitable. Nevada and Montana, for example, offer a property tax exemption for certain renewable energy facilities, including solar energy facilities. California offers a property tax exemption for certain newly constructed solar energy facilities. The California exemption does not apply to facilities owned by centrally assessed companies or for which there has been a change in ownership for property tax purposes. Oregon's exemption statute was expanded in 2007 to allow exemption for a greater range of projects when the electricity is used on site. Also in Oregon, it may be possible to obtain a temporary property tax exemption under the state Enterprise Zone Program or the Strategic Investment Program. The Enterprise Zone Program typically offers an exemption for three to five years, but in rural areas the exemption period may be as long as 15 years. To qualify, state law requires that the company increase its permanent, full-time employment within the zone by at least 10 percent. (Note that one employee may satisfy the minimum hiring requirement if the company has not previously operated within the zone.) Other requirements, such as minimum capital investment size, may apply. The Strategic Investment Program statutes offer a partial exemption for 15 years, with a fee payable to the county and other potential conditions. Negotiations for benefits under both the Enterprise Zone and Strategic Investment Programs generally occur at the county level, sometimes with participation of cities.

D. **Excise Taxes.** When considering operation of a solar facility, state and local excise taxes also should be taken into account.

1. **Washington Public Utility Tax.** The state of Washington and a number of municipalities within Washington impose a public utility tax ("PUT") on the privilege of engaging in certain utility businesses within the state and those localities. The state PUT is imposed at a rate of 3.873 percent of gross income derived from certain enumerated public service businesses, including the "light and power business." The "light and power business" is defined for purposes of the state PUT as "the business of operating a plant or system for the generation, production or distribution of electrical energy for hire or sale and/or the

wheeling of electricity for others." The state PUT is intended to apply only to revenues derived from the retail sale of electricity to consumers. Accordingly, deductions in computing gross revenues may be allowed for revenues derived from the sale of electricity for resale, among other deductions. The Washington business and occupation tax may also apply, depending on the specific activities that the business conducts. Cities and towns also may impose a local PUT or a local business and occupation tax, or in some circumstances, both. Local rates can be substantial.

2. **Other State and Local Excise Taxes.** Other states and localities may impose other kinds of excise taxes. For example, some Nevada counties and cities, and some California cities, impose gross receipts taxes for the privilege of doing business in the locality. California imposes a fee based on gross receipts for the privilege of doing business as an LLC.

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Chapter Nine
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Monetizing the "Green" in Green Power: Renewable Energy Certificates—

Stephen C. Hall, Richard L. Goldfarb

I. Introduction. This chapter explains the basics of Renewable Energy Certificates or "RECs." It discusses the different types of markets to which a solar power developer might sell its RECs, examines criteria that may affect the eligibility of your facility to sell its RECs, and explains verification and tracking, and how they can lead to maximizing the value from your REC sales.

II. How RECs Help Finance Your Renewable Energy Project. Financing is usually the biggest challenge facing independent developers of solar energy projects. A profitable solar energy project typically relies on multiple sources of revenue. Electricity sales are obviously the most important, but state and federal incentives, including tax benefits, are important revenue streams as well. In addition to the revenues from electricity sales and the various governmental incentives, RECs can be an important stream of revenue for a solar energy project. Investors require long-term certainty to give maximum credit to the cash flows from incentive programs. Because REC markets are volatile, investors and lenders prefer to finance a contracted cash flow. Therefore lenders or investors will generally not rely on revenue projections from REC sales absent a long-term REC sale agreement.

III. Introduction to Renewable Energy Certificates. Renewable energy consists of two distinct commodities that may be sold together or separately. These two commodities are (i) electricity and (ii) environmental attributes. The environmental attributes (*i.e.,* the "green" in green power) include the emissions benefits associated with the renewable energy source (*e.g.,* the reduced emission of greenhouse gases) and the renewable fuel source (*e.g.,* solar power, wind power, etc.).

Because there are two commodities, it is possible to

- Sell the electricity with the environmental attributes,
- Sell the environmental attributes separate from the electricity, or
- Bundle the environmental attributes with so-called "brown power" and resell them as green power.

Because of this ability to unbundle the environmental attributes from the electricity, the buyer of the REC may be different from the buyer of electricity. As will be discussed below, this can present both challenges and opportunities.

Although there is no universal definition of a REC, a REC typically represents the environmental attributes from one megawatt hour ("MWh") of electricity from a renewable energy source, and includes the reporting rights to the greenness of that MWh of electricity. In most cases, a contract between the seller of the RECs (*e.g.,* the power producer or an aggregator) and the buyer of the RECs will define the environmental attributes. If RECs and electricity are unbundled, it is also necessary to define the environmental attributes in a power purchase agreement to ensure that the buyer of the electricity knows that it is not obtaining the environmental attributes as well.

IV. An REC by Any Other Name. The market for RECs has been around for less than a decade. Thus it is not too surprising that although there is general agreement about the concept of selling the environmental attributes separately, there is less agreement on what those attributes should be called. RECs are also referred to as:

- Environmental Attributes
- Green Tags
- Renewable Energy Credits
- Green Tickets
- Tradable Renewable Energy Certificates
- Tradable Renewable Certificates
- Green Certificates

V. Types of Markets for RECs. REC prices are determined by market forces. In general, there are two markets for RECs: compliance markets and voluntary markets.

A. Compliance (or Mandatory) Markets. Many states have passed laws requiring certain utilities to include a minimum amount of renewable energy in the portfolio of generating resources serving the utility's load. These laws are referred to as Renewable Portfolio Standards or "RPS." Most state RPS programs allow the utilities subject to the RPS to comply, at least in part, through the purchase of RECs. This means that the buyers of RECs in a compliance market are generally utilities, and the utilities are purchasing the RECs to meet these state law requirements. The markets for RECs in RPS states are generally strong, and RECs that qualify for the various RPS programs will usually fetch the highest prices in these states.

At this time there is no federal RPS, and the RPS requirements differ significantly from state to state. Each state RPS program determines whether RECs are tradable and defines what constitutes a REC that will satisfy its own particular standards. As a result, the buyer's specifications for RECs will be defined by the state standards. Some states specify that the generation source must be located within the state or a particular region. Some states require the electricity to be delivered to the state or a nearby region to meet the state standard. Some states require their utilities to purchase the electricity and REC together. Knowing your state's RPS, if it has one, and the RPS of nearby states will be important in valuing your RECs.

In most cases, RECs will fetch the highest prices in states with an RPS that permits tradable RECs and that has what is known as a "solar carve-out." A solar carve-out is an RPS requirement that a certain percentage of the electricity acquired by utilities subject to the RPS be generated by a solar energy resource. Colorado, New Mexico, Nevada, and New Jersey currently have solar carve-outs.

In compliance markets, buyers tend to care only about whether the source of renewable generation meets the state RPS requirements. In some cases, the structure of a compliance market may limit the flexibility of sellers. For example, the state RPS may specify a certain geographic area, or state policies may favor certain types of generation. In addition, utilities making long-term purchases of RECs may impose credit requirements on sellers in the form of a letter of credit, a corporate guaranty, or other arrangement, as utilities tend to buy RECs only from sources that will satisfy their RPS needs for the long term.

B. Voluntary Markets. The states that do not have an RPS are referred to as voluntary markets. There are also voluntary markets in states that do have an RPS among buyers who are not subject to the RPS. In these markets, sales are driven by customer demand. Voluntary buyers may be motivated by a desire to "do the right thing," or to enhance or affirm corporate identity or environmental awareness. Buyers include marketers, brokers, businesses, nonprofit organizations, and individuals. Businesses and individuals buy RECs because more revenue drives more renewable generation into the power pool, which means less fossil fuel burned and reduced emissions of greenhouse gases.

Increasingly, marketers and brokers bundle RECs into more usable products. For example, it may be difficult for a small solar developer to get the attention of a direct consumer of RECs. A marketer or broker—a classic middleman—may have a customer who needs far more RECs than a single solar development will produce. By bundling together a large number of such small developers' RECs, the marketer or broker will be willing to deal with the small producer in order to satisfy the large customer's demand.

Examples of voluntary REC markets include utility "green pricing programs," such as those offered by PacifiCorp (Blue Sky), Sacramento Municipal Utility District (Greenergy), Portland General Electric (Clean Wind and Green Source), Puget Sound Energy (Green Power Program), and WE Energies (Energy for Tomorrow). Other voluntary markets are corporate purchasers, such as Aspen Skiing Company, HSBC-North America, Johnson & Johnson, Starbucks, and Whole Foods Market.

Voluntary markets are driven by consumer demand or state-mandated utility programs. In most cases, the prices are lower than for compliance markets. However, buyers are often less concerned about geographic location and may be more affected by the type of technology involved. This offers greater flexibility for sellers while imposing fewer credit requirements on them. However, the ambiguous rules, uncertainty of future demand, and lower prices create challenges for the REC seller in a voluntary market. In particular, because of the often short-term nature of most voluntary purchases, lenders and investors are generally unwilling to rely on voluntary demand as security for financing.

Credit requirements are often relevant to buyers in voluntary markets. It is important for the seller to know that the buyer will have the wherewithal to pay, particularly if the buyer is a marketer or broker (who may be a substantial business, or may be a person with a cell phone and an email address), or a nonprofit organization. The same requirements that a utility might impose on a seller of RECs are also germane to enhancing the credit of such buyers: letters of credit, cash deposits, or guaranties.

VI. Is Your Renewable Energy Facility Eligible to Sell RECs? A threshold issue in any REC sale is the question of whether the seller has title to the environmental attributes from the facility. Some of the factors that may disqualify the sale include whether the output from the facility is being sold to the local utility under a QF arrangement, whether the electricity is being sold to an entity that is counting this electricity for compliance purposes, whether the RECs have already been committed or sold under another agreement, and whether the environmental attributes are being used to satisfy a separate compliance requirement.

There are untested questions concerning RECs, such as what happens to a REC when a remote seller goes bankrupt, and would a REC that is sold in advance of its generation be subject to the rights of secured creditors of the generator? There is essentially no case law about RECs, and thus generators and consumers alike may be taking risks they cannot measure.

VII. Verification of RECs. A common requirement in long-term contracts is third-party verification. To be able to sell your RECs for top dollar, it is important to have them certified and verified by an independent third party. These are typically private organizations whose methods have come to be accepted in the marketplace as sufficient to ensure that the environmental attributes promised are, in fact, delivered. Third-party verification generally confirms the quantity, renewable type, and vintage of the RECs, and also that no double counting has occurred. Double counting occurs when renewable power is sold more than once (as either RECs or renewable power) or when the renewables are also used to meet a renewable portfolio standard or other federal, state, or local regulatory requirement. It is also considered double counting if emissions credits/allowances or other environmental attributes are disaggregated by the renewable power/REC supplier and sold separately. The verifiers typically charge a fee for the use of their logo as proof of their verification of the existence of the RECs and perform periodic audits (for which a fee is also charged).

VIII. Tracking. Many states with an RPS are requiring the use of a REC tracking system, such as WREGIS, NEPOOL GIS, or PJM. These electronic systems track each REC from "birth" to retirement. Each unit of generation is assigned a unique ID that includes its attributes, such as the date the energy was generated, facility location, date facility went online, type of renewable, emissions profile, and eligibility for different RPS programs. As REC trackers such as WREGIS expand, it is likely that more states will allow greater use of unbundled RECs for compliance with state RPS requirements.

IX. Conclusion. RECs can be a valuable revenue stream for a solar developer. Selling an intangible attribute into a growing and evolving market for cash is a great way to enhance the viability of a project. RECs can be particularly valuable where they can qualify utilities to satisfy RPS standards in a state, but can also be sold into voluntary markets, though those markets present credit and other challenges. The sale of RECs is subject to minimal regulation at the moment, but that should change over time. There are legal issues that might be faced as RECs become a more important part of the development of renewable energy.

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Chapter Ten
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Tribal Laws and Land Issues—

Stephen Kelly, Michael P. O'Connell, Gary R. Barnum

Many Indian tribes own extensive blocks of land with significant solar resources. Tribal land provides solar developers (which can include the tribe or a business entity controlled by the tribe) with an opportunity to work with a single landowner to enter into a Solar Property Project Agreement securing all site control and related easements necessary to conduct a solar resource assessment and other studies and to construct, own, operate, and maintain a solar energy project.

Indian reservations are unique jurisdictional enclaves in which federal and tribal laws apply. Federal and tribal laws govern leases, easements, and other agreements for use of tribal land within Indian reservations. In addition, as governments, Indian tribes exercise significant regulatory control over use of tribal land and Indian reservation land generally. Federal laws of general application, such as federal environmental, energy, and tax laws, and some state laws also apply to solar energy project developers on tribal land. This chapter provides a brief overview of issues affecting solar energy project development on tribal land.

I. Solar Property Project Agreements on Tribal Land. Land ownership, which varies from reservation to reservation, may include a matrix of land owned by the United States in trust for tribes ("tribal land") and individual Indians and land owned in fee by tribes, individual Indians, and non-Indians. This section focuses on tribal land, although there may be separate consent and tribal law issues relating to land owned in fee by a tribe as well. Even with tribal consent, tribal land can be sold, leased, encumbered by an easement, or used as security for financing only as authorized by federal Indian law and applicable tribal law.

Under 25 U.S.C. § 415, an Indian tribe, as lessor, can lease tribal land for 25 years and may agree to an option extending the lease for an additional 25 years. Specific tribes listed in section 415 can also lease tribal land for 99 years. Most section 415 leases must be approved by the Bureau of Indian Affairs (the "BIA"). Currently, section 415 authorizes two tribes, the Navajo Nation and the Tulalip Tribes of Washington, to lease tribal land for up to 75 years without BIA approval.

Key federal environmental laws the BIA must comply with before approving leases of tribal land and taking other action include the National Environmental Policy Act ("NEPA"), the National Historic Preservation Act (the "NHPA"), and the Endangered Species Act (the "ESA"). Under NEPA, the BIA must prepare an environmental impact statement before approving a lease of tribal land or taking other action, unless a categorical exclusion applies (where the BIA's action is of a type that will not have significant environmental impact, individually or cumulatively) or the BIA concludes after preparing an environmental assessment that its action will not have a significant impact on the environment. Under section 106 of the NHPA, the BIA must take into account impacts of its actions on any property, including traditional cultural properties, listed on or eligible for listing on the National Register of Historic Places and must consult with tribes and other interested parties on measures to avoid, minimize, and mitigate any adverse impacts of its action on such properties. Section 7 of the ESA requires the BIA to consult with either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, and in some cases both, if its action may affect species or designated critical habitat of species listed as threatened or endangered under the ESA. Federal laws of general application, such as the Clean Water Act and Clean Air Act, generally apply on tribal land. Compliance with these and other federal environmental laws can delay project development and result in measures to avoid, minimize, and mitigate project impacts.

Tribal government corporations operating under charters issued by the Secretary of the Interior under 25 U.S.C. § 477 can lease tribal land for 25-year-maximum terms without BIA approval. Leases authorized by section 477 cannot include an option extending the 25-year base term.

For purposes of protecting project solar resources from being disturbed by development on other tribal land, it may be appropriate to combine a section lease of tribal land with an "encumbrance" on other tribal land under 25 U.S.C. § 81. A section 81 encumbrance of tribal land for seven years or more must be approved by the Indian tribe and BIA.

Solar project developers may determine that a right-of-way is necessary for project-related transmission and collector lines, roads, or other project activities. Traditionally, the BIA grants rights-of-way across tribal land with tribal consent. Before issuing a right-of-way, however, the BIA must comply with federal laws governing federal agency actions affecting the environment. In response to a 1997 U.S. Supreme Court case limiting tribal jurisdiction within a BIA-issued right-of-way, some tribes refuse to consent to BIA-issued rights-of-way. These tribes have preferred to approve rights-of-way in the form of "linear leases" under section 415, discussed above. Generally, tribes exercise greater regulatory control over activities conducted on tribal land under a lease.

The Energy Policy Act of 2005 directed the Secretary of the Interior to issue regulations for Tribal Energy Resource Agreements ("TERAs"). Final regulations governing TERAs were issued March 10, 2008. Once an Indian tribe and the BIA enter a TERA covering solar energy development, the tribe can enter into solar energy leases and other business agreements and issue rights-of-way easements for projects on tribal land for 30 years, renewable for another 30 years by the tribe, all without further BIA approval. However, the BIA must conduct NEPA analysis before approving a TERA.

II. Key Considerations.

A. Taxation and Regulatory Authority. In addition to being landowners, Indian tribes are governments that may exercise significant tax and regulatory authority over activities on tribal and other reservation land. A tribe does not waive its governmental regulatory authority by entering into contracts for development of tribal land and resources. A developer should carefully review tribal laws to determine the effect of tribal laws and regulations on a solar energy project. When appropriate, a developer can request a tribe to adopt new tribal laws or amend existing tribal laws to facilitate financing and other aspects of a solar energy project on tribal land.

Nontribal project developers may be subject to applicable state and tribal taxes. Careful review should be conducted to determine whether a Solar Property Project Agreement or other agreements can be designed to avoid or minimize the risk of double taxation. In some cases, Indian tribes are willing to abate tribal taxes to the extent necessary to avoid or minimize the economic impact of double state-tribal tax.

Federal law affords accelerated depreciation for certain investments on tribal land. Some states grant credits against state taxes or abate state leasehold taxes and certain other state taxes for projects on tribal land.

Although federal and tribal laws play a dominant role in energy development on tribal land, state laws may also impact these projects. For example, if access to a state highway is needed, that must be obtained in the manner provided under state law. Nontribal developers and their nontribal employees, contractors, and suppliers may be subject to a variety of state laws.

B. Water Rights. Certain solar technologies involve significant use of water. For many purposes, tribal water rights are appurtenant to tribal land. Except for acts of Congress approving certain Indian water right settlements authorizing leases of tribal water rights apart from tribal land, the most common way to secure a right to use tribal water is through a lease of tribal land to which the tribal water right is appurtenant. Depending on local hydrology, political considerations, and other factors, including necessary transmission lines and rights-of-way, water rights secured under state law may be available for use by a solar project on tribal land.

C. Cultural Resources. In addition to BIA compliance with NHPA section 106 in approving leases of or issuing rights of way on tribal land, the Native American Graves Protection and Repatriation Act and other federal laws establish procedures and permitting requirements that must be followed if human remains, funerary objects, sacred objects, or archaeological resources are intentionally or inadvertently encountered before or during project development on tribal land. Many Indian tribes have tribal laws that deal with these matters on tribal land.

D. Dispute Resolution. As governments, Indian tribes have sovereign immunity. This means an Indian tribe cannot be sued in any court without the express consent of Congress or the tribe itself by appropriate tribal government action. Most tribes are willing to waive tribal sovereign immunity on a limited basis to promote significant tribal economic development projects.

A dispute resolution clause in an agreement with an Indian tribe typically includes a provision designating the court or courts authorized to exercise jurisdiction over a dispute with the tribe. These clauses should be carefully reviewed, as federal and state courts often will not have jurisdiction over a dispute with an Indian tribe, despite a forum selection clause. Developers are often reluctant to agree to have such disputes heard in a tribe's tribal court.

To address this dilemma, many Indian tribes will agree to a dispute resolution clause designating binding arbitration as the exclusive means of resolving disputes. Although a binding arbitration clause leaves questions regarding which court can enforce the promise to arbitrate and enforce, modify, or vacate an arbitration award, well-drafted agreements to resolve disputes by binding arbitration and well-drafted sovereign immunity waivers resolve some of the most challenging dispute resolution issues in tribal Solar Property Project Agreements.

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Chapter Eleven
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Foreign Corrupt Practices Act—

Christian Lucky, Jason Prince

With globalization, an increasing number of companies once thought to be only national, regional, or local now operate in the global marketplace. Companies operating in the solar energy industry commonly participate in the global marketplace horizontally, with some portion of their chain of production and sales occurring outside the United States, and vertically, in that they have non-U.S. owners or they own or invest in non-U.S. entities.

Accessing the global marketplace brings many advantages to a solar energy company including access to markets, clients, and projects; more capital sources; a wider range of companies with which to collaborate; increased manufacturing efficiencies; a greater number of vendors; and more investment opportunities. Operating in the global marketplace, however, requires the management of a solar energy company to be aware of the many regulations applicable to companies that have cross-border operations and to implement company programs and policies to ensure compliance with such regulations. Regulations potentially applicable to a solar energy company with cross-border operations include, among others, anti-corruption laws such as the Foreign Corrupt Practices Act (the "FCPA") and the Organization on Economic Cooperative Development Convention, anti-money laundering laws, U.S. trade and investment sanctions, anti-boycott laws, anti-terrorism controls, export controls, and foreign direct investment controls under the Exxon-Florio Provisions.

This chapter will focus on the FCPA.[1] The FCPA is one of the most important U.S. statutes applicable to U.S. companies with operations outside the United States and to non-U.S. companies with connections to the United States.

The notoriety of the FCPA in the energy industry is largely attributable to Siemens AG, a Germany conglomerate, and three of its subsidiaries ("Siemens") pleading guilty in a U.S. federal court to FCPA violations in December 2008. U.S. authorities alleged, among other FPCA violations, that starting in 2001, Siemens' Power Generation ("PG") and Power Transmission and Distribution ("PTD") divisions paid at least $356.9 million in bribes to foreign officials in multiple countries. As part of its settlement with the U.S. Department of Justice (the "DOJ") and the U.S. Securities and Exchange Commission (the "SEC"), Siemens agreed to pay a $450 million criminal penalty and to disgorge $350 million in wrongful profits. On the same day, Siemens announced an agreement with German prosecutors to pay a €395 million ($569 million) fine for violating Germany's anti-corruption laws, adding to the €201 million ($285 million) that a Munich court sentenced Siemens to pay in October 2007.

I. Overview of the FCPA. The FCPA prohibits companies (both publicly traded and private) and individuals from paying or promising to pay foreign officials, directly or indirectly, anything of value with the corrupt intent of obtaining or retaining business and mandates internal accounting controls and record-keeping practices aimed at preventing and detecting illegal bribes.

After an overview of the potential penalties for FCPA violations, this chapter will provide a broad overview of the FCPA's two prongs: (1) the anti-bribery provisions and (2) the books and records provisions. Thereafter, because

[1] 15 U.S.C. § 78dd-1, *et seq.*

this chapter is intended for a global audience, the jurisdictional scope of the FCPA will be described. The emergence of vicarious liability and successor liability as major enforcement trends will then be addressed, as well as a discussion of the emergence of private rights of action. With the attention that the Siemens enforcement action brought globally to the FCPA, a brief description of that enforcement action and the lessons offered by it will be addressed. A punch list of FCPA compliance action items is found at the end of this chapter.

A. **Who Enforces the FCPA and What Are the Penalties?** The DOJ and SEC share responsibility for enforcing the FCPA. While the DOJ handles all criminal actions and all civil actions against nonissuers, the SEC handles only civil actions against issuers.

In recent years, the number of DOJ and SEC enforcement actions under the FCPA has dramatically increased. In 2007 and 2008, the DOJ and SEC brought a combined total of 71 FCPA enforcement actions—a more than 162 percent increase over the total number of FCPA enforcement actions brought in 2005 and 2006. Moreover, high-ranking officials at both agencies have indicated that this upward enforcement trend will almost certainly continue.

Such enforcement actions can result in hefty fines and even jail time. Under the FCPA's anti-bribery provisions, entities face criminal fines of up to $2 million per violation and civil penalties of up to $10,000 per violation. Individuals face criminal fines of up to $100,000 or imprisonment of not more than five years, or both, per violation, and civil penalties of up to $10,000 per violation. As for the accounting and record-keeping provisions, entities face fines up to $25 million and individuals face up to 20 years in prison and fines up to $5 million, or both. Additionally, under the alternative "profit disgorgement" penalty provisions, a fine can be twice the gross gain to the defendant or, if a competitor suffers a monetary loss, the greater of twice the gross gain to the defendant or twice the gross loss to the competitor.

B. **The Two Prongs of the FCPA.** The FCPA contains two sets of provisions geared toward battling bribery abroad. First, the FCPA's anti-bribery provisions prohibit companies (both private and public) and individuals from paying or promising to pay foreign officials anything of value with the corrupt intent of obtaining or retaining business. Second, the FCPA's accounting and record-keeping provisions mandate various internal accounting controls and record-keeping practices aimed at preventing and detecting illegal bribery of foreign officials.

1. **Anti-Bribery Prohibitions.** The broad scope and sweeping language of the FCPA's anti-bribery provisions render compliance challenging for public and private international solar energy companies. Again, the FCPA's anti-bribery provisions prohibit companies and individuals from paying or promising to pay foreign officials anything of value with the corrupt intent of obtaining or retaining business. "Anything of value" includes not only money, but also such perks as bottles of wine, tickets to sporting events, and internships for family members. Moreover, the phrase "obtaining or retaining business" encompasses everything from securing contracts, to winning tax breaks, to bypassing regulatory requirements.

The term "foreign official" is especially slippery, including not only actual government members, but also government instrumentalities, public international organizations (*e.g.,* the United Nations), political parties, political party officials, candidates for political office, and even royal family members. In countries such as China, where government instrumentalities known as state-owned enterprises ("SOEs") dominate the business arena, an array of potential business partners may arguably constitute "foreign officials." For example, in June 2008, the

DOJ and SEC brought enforcement actions against AGA Medical Corporation ("AGA"), a Minnesota-based medical products manufacturer, for authorizing its Chinese distributor to pay $460,000 in "commissions" to Chinese doctors. These doctors in turn directed their hospitals to order AGA's products. Given that these hospitals are SOEs, the doctors constitute "foreign officials" under the FCPA, thus rendering AGA's payments illegal bribes and resulting in a $2 million penalty.

2. **Accounting and Record-Keeping Provisions.** Publicly traded international solar energy companies must also contend with the FCPA's accounting and record-keeping provisions. Under the FCPA's accounting provisions, issuers must establish and maintain an internal accounting controls system that provides reasonable assurance of (1) managerial oversight of all company assets and transactions, (2) compliance with generally accepted accounting principles or other criteria applicable to financial statements, and (3) periodic comparisons between the company's recorded and actual assets.

The FCPA's record-keeping provisions require issuers to make and keep books, records, and accounts, which, in reasonable detail, accurately and fairly reflect transactions involving an issuer's assets. In short, if an issuer bribes a foreign official to obtain or retain business, it must record this bribe in its books as a "bribe." Recording a bribe as a "discretionary payment," "performance bonus," or anything similarly deceptive constitutes an FCPA violation.

C. **Jurisdictional Scope.** The FCPA casts a sweeping jurisdictional net. Most U.S. criminal statutes employ the territorial principle of jurisdiction, requiring the existence of some nexus between the prohibited conduct and the territory of the United States. In contrast, the FCPA employs not only the territorial principle, but also the nationality principle, which does not require any sort of U.S. territorial connection to invoke jurisdiction. Accordingly, if a non-U.S. company bribes non-U.S. officials without implicating the territory of the United States in any way, the company still might face a DOJ or SEC enforcement action under the FCPA.

In general, the FCPA covers three categories of entities and individuals: (1) "issuers," (2) "domestic concerns," and (3) "any person other than an issuer or domestic concern." The anti-bribery provisions pertain to entities and individuals falling within any of these three categories, while the accounting and record-keeping provisions apply only to issuers.

- *Issuers*: Issuers are entities required under the U.S. Securities Exchange Act to register under Section 12 or to file reports under Section 15(d). In other words, publicly held companies with securities or American Depository Receipts listed on a U.S. securities exchange (*e.g.,* New York Stock Exchange ("NYSE") or NASDAQ) are subject to the FCPA. The nationality principle subjects issuers to potential civil and criminal liability under the FCPA, regardless of whether they ever carry out a prohibited act within U.S. territory.[2]

[2] 15 U.S.C. §§ 78m, 78dd-1.

- *Domestic Concerns*: The term "domestic concern" includes any individual who is a U.S. citizen, national, or resident. It also encompasses any business entity (public or private) with its principal place of business in the United States or that is organized under the laws of a U.S. state, territory, possession, or commonwealth. Pursuant to the nationality principle, domestic concerns who bribe foreign officials may face civil and criminal penalties under the FCPA, even if the bribery transpired completely outside of U.S. territory.[3]

- *Any Person Other Than an Issuer or Domestic Concern*: Under the more traditional territorial principle, an individual or entity faces FCPA exposure if it uses the mails or any means or instrumentalities of interstate commerce, while within U.S. territory, to carry out an act prohibited under the FCPA.[4] In other words, if such a connection to U.S. territory exists, the individual or entity need not be an issuer or a domestic concern for the FCPA to apply. This jurisdictional hook thus applies to any foreign individual or entity that causes a prohibited act to be done within U.S. territory by any person acting as the individual's or entity's agent.

Officers, directors, employees, and agents of entities that fall within one of the three categories above also face FCPA exposure. It does not matter whether the officers, directors, employees, and agents qualify as domestic concerns or issuers or utilize an instrumentality of interstate commerce in their own rights; mere association with the covered entity suffices for purposes of imposing FCPA civil and criminal penalties.

The FCPA's unprecedented extraterritorial reach has garnered criticism inside the United States and abroad. Regardless, the DOJ and SEC have demonstrated a willingness to bring FCPA enforcement actions against companies and individuals possessing little if any connection to the United States. The DOJ's and SEC's expansive interpretation of the FCPA's jurisdictional provisions likely stems in part from the reality that many other countries are failing to enforce their own anti-bribery laws. Rather than allow U.S. companies to suffer an unfair disadvantage in the international business arena, the DOJ and SEC appear to have taken it upon themselves to level the playing field through aggressive extraterritorial enforcement of the FCPA.

II. Vicarious and Successor Liability Under the FCPA. Under the FCPA, the management of a company does not have to intend, encourage, or have actual, literal knowledge of FCPA violations in order for the company and its management to be liable for FCPA violations. Knowledge is established under the FCPA if a person is aware of a high probability of the existence of the prohibited activity.[5] The legislative purpose of this standard is to prevent companies from adopting a "head in the sand" approach to the activities of their foreign agents and partners.[6] From this scienter requirement flows an ocean of potential liability.

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[3] 15 U.S.C. § 78dd-2.

[4] 15 U.S.C. § 78dd-3.

[5] 15 U.S.C. § 78dd-1.

[6] *See* H.R. Rep. No. 100-576, at 920 (1988), *reprinted in* 1988 U.S.C.C.A.N. 1547, 1953.

A. **Third-Party Agents.** Solar energy companies operating outside the United States often rely on nonemployee agents who are locally embedded and have local knowledge to assist them. Such agents are commonly responsible for networking and making introductions to individuals, companies, and agencies in a local market; recruiting talent; providing local "know-how" and "show-how"; making sales; managing marketing initiatives and public relations; overseeing leasing operations and facilities management; conducting procurement and supply; handling freight forwarding and customs management; and many other actions. Additionally, a non-U.S. joint venture partner often acts as a representative or an agent in a foreign country for a U.S. joint venture partner. In order to succeed in completing their services to a U.S. company, agents potentially may make payments to foreign officials in violation of the FCPA.

The FCPA prohibits corrupt payments through intermediaries. Obviously, a company will violate the FCPA if it encourages or authorizes corrupt payments by its agents (including joint venture partners). Of more relevant concern to compliance-conscious solar energy companies is the fact that a company will be liable for violations of the FCPA by its agents if such company is deemed to have demonstrated conscious disregard or deliberate ignorance that such payments were being made by its agents or joint venture partners.[7]

Solar energy companies should also recognize the risks of hiring a foreign official as an agent. Paying a government official who is an agent with the intent to obtain or retain business would clearly be a violation of the FCPA. There are limited circumstances in which a government official might be retained as an agent (for example, to assist in locating and reserving conference and hotel space for a trade exhibition), but solar energy companies should consult counsel to vet carefully and to structure such arrangements. Many individuals deemed "foreign officials" might not be intuitively considered so by companies. For example, university deans and faculty may be government employees as well as employees of businesses that have government owners.

To avoid being held liable for corrupt payments made by agents, solar energy companies must take proactive measures including conducting due diligence on potential agents and joint venture partners to determine their expertise, relationship to government agencies, and reputation. An agent who has no experience in the relevant industry raises the question of how such agent can be helpful to the company absent using government connections improperly. Likewise, solar energy companies should be wary of agents who have family members in a foreign government or are overly chummy with officials at an agency (perhaps through prior employment). Solar energy companies should conduct due diligence to determine whether the agent (including a potential joint venture partner) has been cited for FCPA or similar violations in the past or has otherwise shown disregard for regulatory compliance. Contracts should be drafted in a manner to promote compliance. In addition to making FCPA-related representations and covenanting compliance with the FCPA, agents and joint venture partners should complete a questionnaire as to their experience with and relations to foreign governments and should be required to provide receipts for all expenses paid by the company. Agency and joint venture agreements should provide for immediate termination if the company determines that the agent is violating the FCPA or has made false representations to the company regarding FCPA compliance. Solar energy companies should consider

[7] Department of Justice, Lay-Person's Guide to FCPA (June 2001), http://www.usdoj.gov/criminal/fraud/docs/dojdocb.html. Moreover, companies should be aware that criminal liability does not require that the company know that the actions taken by its agents were a violation of the FCPA per se but only that the actions were unlawful in a general sense. *United States v. Kay*, 513 F.3d 461 (5th Cir. 2008).

providing FCPA training to agents (in a language in which the agent is sufficiently proficient) and should have agents certify that they have received such training.

Each foreign environment presents a different set of specific risks regarding the engagement of agents. Variables include the extent to which a foreign government operates through quasi-government entities, bookkeeping and recordation practices (such as how receipts and invoices are issued), the emergence of new schemes for kickbacks and secreting income pools for bribing, and other factors. Any company that has occasion to hire an agent to represent it outside the United States should have a compliance program in place. Prior to engaging agents, solar energy companies should consult with counsel who has current knowledge of risks and enforcement trends in order to confirm that their compliance program is adequate and to tailor the legal framework for the agent's work to the specific circumstances of the given countries.

B. Subsidiaries. Any company doing business beyond the borders of the United States through a subsidiary is potentially liable for any FCPA violations by the subsidiary. Two theories are typically pointed to, under which courts hold parents liable for FCPA violations by their subsidiaries. First, under the alter ego theory, a parent will be held liable for the actions of a subsidiary if the parent dominates the subsidiary by having control over ownership, shared directors, or shared officers, or by other means. Second, agency principles hold that a corporation will be liable for the crimes of its agents when committed in the scope of the agent's authority and the corporation gains some benefit. Neither of these theories places much weight on whether the subsidiary is wholly or partially owned.

In practice, given how the DOJ and SEC interpret the scienter requirement, solar energy companies should be alert to the fact that they can be held liable for violations of the FCPA's anti-bribery provisions by their subsidiaries (both wholly owned and minority owned) simply by demonstrating conscious disregard or deliberate ignorance of the fact that bribes were made. Thus, as with agents, even if a parent did not authorize or encourage violations of the FCPA by its subsidiary, the parent may be subject to enforcement actions if it did not adequately take proactive measures to prevent its subsidiary's FCPA violations.

For example, Westinghouse Air Brake Technologies Corporation ("Wabtec") agreed to pay a fine and enter into a deferred prosecution agreement to resolve FCPA offenses caused by its Indian subsidiary, Pioneer Friction Limited ("Pioneer"). Pioneer was accused of making corrupt payments in order to assist it in obtaining and retaining business with the Indian Railway Board, among other motives. The SEC's complaint noted that although Wabtec's Code of Conduct in effect from 2001 to 2006 prohibited giving anything of value to improperly influence any person in a business relationship with Wabtec, the company had no FCPA policy and did not provide training or education to any of its employees, agents, or subsidiaries regarding the requirements of the FCPA. Wabtec also failed to establish a program to monitor its employees, agents, and subsidiaries for compliance with the FCPA.

In addition to violations of the FCPA's anti-bribery provisions, parents can be held liable for their subsidiaries' violations of the accounting and controls provisions of the FCPA. The FCPA requires that companies (whether U.S. or non-U.S.) that are registered with the SEC and/or are listed on a U.S. stock exchange (an "issuer") (1) make and keep books, records, and accounts that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the issuer[8] and (2) devise and maintain a system of internal accounting controls consistent with specific requirements under the FCPA.[9] Subsidiaries (including non-U.S.) in which an issuer has a greater than 50 percent stake are fully subject to the FCPA accounting and record-keeping provisions. An issuer with a 50 percent or smaller stake is required to make a "good-faith attempt" to cause the foreign subsidiary to comply with the FCPA's accounting rules.

A continuing stream of DOJ and SEC enforcement actions emphasizes the importance of parent companies establishing a robust compliance program and plugging their subsidiaries into such a compliance program. Compliance programs should include at a minimum written policies, recurrent training (in languages other than English, if necessary), and internal auditing of controls. Additionally, parent companies should have agreements with subsidiaries they do not control (including joint venture partners and passive investment vehicles) that provide for FCPA representation and covenants by the subsidiary, termination in the event of actions or policies that create FCPA risk to the parent, annual certification, right to inspect books and records, and other FCPA compliance-enhancing provisions.

III. FCPA Successor Liability in the Mergers and Acquisitions and Joint Venture Investment Context. Solar energy companies face substantial risk of successor liability under the anti-bribery provisions of the FCPA when acquiring or investing in foreign targets. (While the considerations set forth in the following section apply equally to companies contemplating investing in a foreign target or acquiring a foreign target, for ease of reading, "acquisition" in this section is meant to include both an acquisition and an investment transaction.) DOJ and SEC enforcement actions indicate that successor liability may attach (1) if a bribe was paid to secure a benefit that the acquiring company will share and (2) the acquiring company has knowledge of such corrupt payment. As with other aspects of FCPA enforcement, companies may be deemed to have known of the corrupt behavior if they demonstrate conscious disregard or deliberate ignorance of the fact that such payments were made. Thus, to reduce the risk of successor liability under the FCPA, solar energy companies must take proactive measures to identify and properly respond to pre-acquisition FCPA violations by targets. While asset acquisitions generally do not trigger FCPA successor liability, recent administrative rulings by the U.S. Department of Commerce in the context of export control violations, and favorable comments of such rulings by DOJ officials, suggest that the DOJ may seek to impose successor liability on asset acquisitions in the future.[10]

Surprising to most U.S. business people is the fact that the pre-acquisition actions of a foreign target may raise FCPA liability for the acquiring company *even if the foreign target was not subject to the FCPA prior to the acquisition*. The DOJ explains its enforcement policy by stating that it seeks to eliminate incentives for foreign companies to bribe public officials by allowing U.S. companies to acquire such companies at such a price and in such a manner so as to effectively reimburse the foreign company for its corrupt activities.[11] In the DOJ's view, the acquiring company has an obligation to avoid compensating the foreign target for any past improper payments.

[8] 15 U.S.C. § 78m(b)(2)(A).

[9] 15 U.S.C. § 78m(b)(2)(B).

[10] *In re Sigma Aldrich*, Case Nos. 01-BXA-06, 07, 11 (Aug. 29, 2002); *see also* Foreign Corrupt Prac. Act Rep. § 5:23.

[11] *See, e.g.,* DOJ Opinion Procedure Release No. 08-01 (Jan. 15, 2008).

IV. Private Actions. The FCPA does not contain a private right of action. In other words, under the FCPA, only the U.S. government may sue entities and individuals for bribing foreign officials. However, this fact has not stopped creative plaintiffs' attorneys from bootstrapping FCPA violations into other causes of action.

For example, in *Alba v. Alcoa*, Aluminum Bahrain B.S.C. ("Alba"), a Bahraini state-controlled company, sued its aluminum supplier, Alcoa, Inc. ("Alcoa"), for allegedly paying millions of dollars in bribes to Bahraini government officials.[12] Although Alba's complaint raised U.S. Racketeer Influenced and Corrupt Organizations Act and common law fraud claims, these claims sounded eerily similar to standard FCPA claims. The DOJ and SEC soon intervened, prompting the federal court to stay discovery in *Alba* pending the U.S. government's FCPA investigation. Additionally, an ironworkers' pension fund filed a shareholders' derivative action in the same court against 22 current and former Alcoa officers and directors, essentially relying on the same FCPA-based allegations set forth in the *Alba* complaint.[13]

As the DOJ and SEC continue to increase their enforcement of the FCPA, and the global anti-bribery movement continues to raise FCPA awareness, private lawsuits like those described above will almost certainly increase. Indeed, such lawsuits may become a common tool for companies seeking justice against their competitors for winning contracts and gaining other business advantages through bribery of foreign officials.

V. Lessons Learned from Recent FCPA Enforcement Actions. On December 15, 2008, Siemens pleaded guilty in U.S. federal court to violating the FCPA. As part of its settlement with the DOJ and SEC, Siemens agreed to pay a $450 million criminal penalty and to disgorge $350 million in wrongful profits. On the same day, Siemens announced an agreement with German prosecutors to pay a €395 million ($569 million) fine for violating Germany's anti-corruption laws, adding to the €201 million ($285 million) that a Munich court sentenced Siemens to pay in October 2007.

The $1.6 billion penalty Siemens must pay U.S. and German authorities is roughly 35 times larger than any previous anti-corruption settlement. This staggering figure does not include the €850 million ($1.2 billion) Siemens reportedly paid to attorneys, accountants, and other service providers to deal with its global bribery scandal since late 2006. Nor does it include the significant sums Siemens must pay an outside FCPA compliance monitor for the next four years as part of its settlement with the DOJ and SEC.

A. Wakeup Call for the Global Solar Energy Industry. U.S. authorities estimate that Siemens paid $1.4 billion in bribes to foreign officials in Asia, Africa, Europe, the Middle East, and the Americas, and a significant portion of this illegal activity occurred in the energy industry. Indeed, starting in 2001, Siemens' PG and PTD divisions paid at least $356.9 million in bribes to foreign officials in multiple countries.

In recent years, once the DOJ and SEC have learned of one company's violation of the FCPA, they have expanded the scope of their investigation to include other players operating in that industry. The business of solar energy companies is highly dependent on the discretion of governmental agencies (including development banks, which

[12] *See* Complaint, *Aluminum Bahrain B.S.C. v. Alcoa, Inc.*, No. 08-cv-299 (W.D. Pa. Feb. 27, 2008).

[13] *See* Complaint, *Hawaii Structural Ironworkers' Pension Trust Fund, derivatively filed on behalf of Alcoa, Inc. v. Belda, et al.*, 08-cv-00614 (W.D. Pa. May 6, 2008).

qualify as "foreign officials" under the FCPA). Siting, permitting, environmental review and enforcement, local community support, responding to RFPs, negotiating and performing under power purchase agreements, conducting project build out, establishing generation interconnections and transmission tie ins, obtaining transmission services, obtaining subsidies or tax advantages, safety compliance, competition and antitrust compliance, among other operations, are all aspects of an international energy company's business that often involve the discretion of a foreign official. Some of these officials expect bribes from companies (or third parties engaged by companies) in exchange for favorable treatment. The DOJ's and SEC's discovery of Siemens' corrupt activities has cast a bright spotlight over the global energy industry, making it especially fertile territory for industry-wide FCPA dragnets.

Siemens paid the massive fines it did in connection with violations of the FCPA's accounting and record-keeping provisions, demonstrating how important a compliance program is to ensuring a company avoids FCPA violations and draconian fines. The Siemens settlement provides many additional lessons and reminders for solar energy companies, including:

- *Vicarious Liability for Third Parties*: Siemens' foreign business consultants played a significant role in bribing foreign officials to secure business advantages in the energy industry. The FCPA can leave solar energy companies and individuals vicariously liable for the conduct of third parties such as consultants, distributors, and sales agents, even if the company lacks actual knowledge of their wrongdoing. Accordingly, the mere failure to recognize and investigate a foreign business consultant's suspicious activities may expose a company to FCPA liability. Such vicarious liability makes it especially important for solar energy companies to (1) conduct due diligence on their potential business consultants; (2) include FCPA-specific representations, warranties, covenants, audit rights, and termination rights in all business consultant contracts; and (3) train employees on how to recognize the red flags associated with business consultants' unsavory activities and report these red flags to management. Even compliance-conscious solar energy companies can become entangled in FCPA enforcement actions if they do not have robust compliance programs that are tailored to specific industries and geographic locales.

- *Tone at the Top*: The DOJ and SEC have publicly criticized Siemens' senior management for tacitly condoning bribery of foreign officials as a legitimate business strategy. Both agencies have also acknowledged an intention to pursue FCPA criminal penalties (including jail time) against Siemens executives, employees, and consultants who participated in the bribery schemes. In short, Siemens lacked the necessary "tone at the top" to foster a culture of FCPA compliance within the company. Solar energy companies can take a crucial first step toward avoiding this scenario by working with their attorneys to draft a clearly articulated policy against FCPA violations. This policy should highlight prohibited behavior, accommodate employees who blow the whistle on compliance violations, and set forth disciplinary procedures to address such violations.

- *Internal Accounting Controls*: The DOJ and SEC based their charges against Siemens almost exclusively on the FCPA's accounting and record-keeping provisions. Siemens' subsidiaries attempted to cover up bribes by routing the money through slush funds or intercompany accounts and recording the illegal payments with misleading labels such as "commissions." To avoid illegal accounting tactics, businesses should centralize their accounting systems to ensure corporate headquarters review all foreign financial transactions. Careful analysis of the financial records of employees and business partners abroad can enable businesses to quickly detect and eliminate conduct prohibited under the FCPA.

- *FCPA's Jurisdictional Scope*: Siemens is a German corporation with its principal place of business in Germany, and many of the bribes it paid abroad did not implicate U.S. territory in any way. Nevertheless, Siemens is subject to the FCPA because it has listed its securities on the NYSE since 2001 and, therefore, qualifies as an "issuer" under the FCPA. Moreover, in many instances, Siemens routed bribes through U.S.-based banks, providing the U.S. government an additional jurisdictional basis for pursuing Siemens under the FCPA. These facts serve as a reminder of the FCPA's sweeping jurisdictional reach. All U.S. solar energy companies with international operations—and many of such non-U.S. companies—have FCPA liability exposure.

- *Cross-Border Enforcement*: The cooperation exhibited in the Siemens case between the DOJ and SEC, on the one hand, and the German enforcement agencies, on the other, is a noteworthy development in cross-border FCPA enforcement. Solar energy companies should recognize that the DOJ, the SEC, and their foreign counterparts share FCPA-related information about the non-U.S. operations of companies subject to the FCPA.

- *Cooperation with Government Investigations*: The DOJ and SEC have indicated that Siemens' total FCPA penalty could have been considerably larger than $800 million. Indeed, application of the Federal Sentencing Guidelines would have resulted in an FCPA criminal fine of between $1.35 billion and $2.7 billion. Due to Siemens' "exceptional" cooperation with the U.S. government's investigation and demonstrated commitment to remediating its operations, however, the DOJ and SEC exhibited leniency. Siemens' strategy of cooperating with authorities, rather than attempting to stonewall them, provides a model for future targets of FCPA enforcement actions.

VI. Action Items Summary. Compliance-savvy solar energy companies operating in the global marketplace must take proactive measures to mitigate the risk of vicarious and successor liability under the FCPA including (among other measures):

- adopting and effectively disseminating comprehensible written FCPA compliance policies;

- mandating recurrent education programs for management, employees, and agents (of both the parent and its subsidiaries, and perhaps in languages other than English when appropriate);

- conducting due diligence on potential acquisition and investment targets, joint venture partners, and third-party agents;
- entering into agreements with third parties that contain adequate FCPA representations, covenants, and compliance-monitoring mechanisms;
- establishing ongoing compliance monitoring practices of the activities of subsidiaries, joint venture partners, employees, and third-party agents; and
- taking appropriate remedial measures in the event that an FCPA violation is discovered in either pre-acquisition or pre-investment diligence or in the ongoing operations of the company; such remedial measures may require self-reporting to the DOJ.

FCPA compliance programs must be tailored to the geographic locations in which a company operates, the line(s) of business in which a company engages, the nature of a company's interaction with government officials, and the reliance that a company or its subsidiaries or agents has on discretionary actions of foreign officials, among other factors. In addition to being knowledgeable about the core proscriptions of the FCPA itself, a company and its counsel must be well versed in and have current knowledge of the DOJ's and SEC's enforcement patterns, as can be discerned from such sources as DOJ Opinion Procedure Releases and SEC No-Action Letters. FCPA enforcement patterns evolve over time. Compliance programs must be revised in light of these evolving enforcement patterns.

STOEL RIVES LLP ATTORNEYS AT LAW

Chapter Twelve
LEX HELIUS: THE LAW OF SOLAR ENERGY
—Securities Regulation—
John J. Halle, Christian M. Lucky

Businesses seeking to make use of U.S. capital markets to raise money must concern themselves with U.S. securities laws. The United States and each state or other political subdivision of the United States have laws regulating the purchase, sale, and trading of securities. While the laws are generally similar in most respects, there are some important differences, so it is necessary to check both the federal law and the law of each state in which the fundraising or trading activity will occur.[1]

Federal securities laws are subject to regulation and enforcement by the Securities and Exchange Commission (the "SEC"). The SEC also empowers and oversees the activities of various self-regulatory organizations, such as the National Association of Securities Dealers, Inc., and the various exchanges and other systems on which securities are traded, such as the New York Stock Exchange and the National Association of Securities Dealers Automated Quotation System (NASDAQ). These organizations enact their own regulations within the areas of their authority, but their regulations are subject to review and approval by the SEC. State securities laws are subject to regulation and enforcement by a securities commission that, most often, functions under the authority of the Secretary of State.

Neither federal nor state securities laws are explicitly restricted as to the geographical scope of their application. In practice, as described in more detail below, federal securities laws are applied principally to regulate transactions in the United States or its territories or transactions to which U.S. citizens or residents are a party. Even when no U.S. citizen or resident is a party, U.S. securities laws may be applied when substantial activity in connection with the transaction occurs in the United States, or in circumstances in which the nature of the transaction tends to undermine confidence in U.S. securities markets. As a practical matter, and in the absence of malicious intent, transactions to which no citizen or resident of the United States is a party and as to which no substantial activity occurred in the United States are not subject to U.S. securities laws.

State securities laws clearly apply to protect the citizens and residents of a state who are contacted within the state in connection with a transaction. Thus, for example, state laws regulating the sale of securities by the businesses that issued them ("issuers") clearly apply to sales made to purchasers resident in the state. Some state regulatory commissions have sought to regulate such sales made from the state to residents of another state, but to date they have rarely succeeded in applying their state law to such transactions.

I. What Is a Security? Both federal and state laws define a security very broadly to include a wide variety of instruments, including stock and other forms of equity and certain debt instruments. In addition to the specific list of instruments that constitute securities, an "investment contract" is a security. An investment contract has been defined by courts to be a contract or instrument involving the investment of money or other value in a common enterprise with the expectation of profit resulting from the efforts of others.[2]

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[1] Except where we specifically mention that we are describing other law, this chapter generally describes the applicable provisions of the federal securities laws and regulations. In very general terms, the equivalent state laws are likely to be similar, but there may be differences or separate filing and fee requirements that must be observed.

[2] There is some slight variation in the definition, but all variations are generally to the effect described above.

As an initial matter, it is important to determine whether a contemplated transaction involves a security, because the securities laws apply only if it does. The answer often depends on a number of fact-specific issues, but here are a few general guidelines:

- Almost any instrument evidencing ownership of a business, including stock, limited partnership interests, limited liability company interests, or other instruments having equivalent function, is a security. Joint venture agreements, general partnership interests, and similar instruments representing ownership of a business that the owners will collaborate in running may not be securities.

- Securitized debt instruments, including bonds, debentures, and other instruments evidencing debt held similarly by a group of investors, are securities. Conventional, commercial loan arrangements, whether with traditional lenders or pursuant to private arrangement, are not securities, including syndicated loans with a group of traditional lenders.[3] The line between commercial and securitized debt has generated considerable judicial analysis and requires careful review in the case of novel or unusual interests.

- Derivative instruments, such as options, warrants, and other instruments evidencing the right to exchange the interest for a security or to purchase a security, are deemed to constitute the security into which they are convertible or for which they are exercisable, and may also be securities in their own right. Thus, for example, the sale of a warrant exercisable to buy stock is the sale of a security, as is the sale of the stock on exercise of the warrant. The existence of the warrant may also be a continuing offer to sell the stock.

- Agreements or instruments of any kind are securities if, as a matter of fact, they meet the definitional test of an investment contract described above.

An agreement or instrument may constitute or contain a security regardless of its form. For example, a complex agreement relating to a project may contain numerous provisions to which securities laws do not apply while also containing a security that must adhere to securities laws. Similarly, an instrument may constitute stock if it creates an equity interest in a business, even if the word "stock" is not used.

II. What Do the Securities Laws Regulate? As noted, the securities laws regulate transactions in securities but do not regulate all such transactions. In general, securities laws regulate (1) purchases or sales of securities, (2) offers to purchase or sell securities, and (3) the activity of markets that trade in securities and those who use them. Securities laws generally do not regulate bona fide gifts of securities, nor do they attempt to control the nature of the instrument that constitutes a security or the rights of holders of such securities under such instruments. Such rights are generally controlled under state corporate laws or are determined by private agreement.

[3] Some lenders in connection with conventional loan arrangements require warrants or other derivative interests in addition to the normal interest provisions of the loan documents. In such cases, the loan documents themselves may not be securities but the warrants are securities.

Purchases and Sales of Securities. Numerous laws and regulations govern the activity of persons who purchase or sell securities. The general purpose of these laws is to ensure that a transaction is fair to both sides by requiring a buyer or seller with knowledge of material facts relevant to the value of the securities to make that information known to the counterparty in the transaction.[4] As described in more detail below, both federal and state securities laws regulate both the sale of securities by issuers (generally upon original issuance) and the resale of those securities by others.

Offers to Sell or Purchase Securities. Not only are purchases and sales of securities regulated, but offers to purchase or sell securities are independently regulated. Thus, for example, it is possible to violate a securities law by offering to sell a security even though no sale ever occurs. In practice, offers are rarely the subject of either public or private enforcement proceedings. In the case of public proceedings, the absence of harm resulting from the offer generally limits enforcement efforts to obtaining cease and desist orders against persons regularly making unlawful offers. The same lack of harm effectively precludes private enforcement action.

The fact that offers are rarely the subject of independent enforcement proceedings does not mean, however, that offers can be made with impunity. As discussed in more detail below, some rules relating to whether and how a security may be sold apply differently depending on whether, how, and to whom offers have been made. Accordingly, ill-considered offers to purchase or sell securities can cause a related sale of securities to be unlawful, even if it would have been permitted had the offers not been made.

Regulation of Trading and Trading Markets. If securities are held by a relatively large number of people, or if they are traded on an exchange or other trading facility, numerous regulations apply to the issuers of the securities, the markets on which the securities are traded, and those persons trading on such markets. Most of the rules applicable to the latter two categories are of only minor significance to energy businesses, but the first category can impose substantial regulatory cost and impose other restrictions and burdens on companies whose securities are traded in the United States. In general, these rules do not apply to companies whose securities are illiquid and closely held, or to companies whose trading markets are in countries other than the United States.

III. Purchases and Sales of Securities: Regulatory Overview.

A. General Provisions. U.S. securities laws make it unlawful for a person, in connection with the purchase or sale of a security,

> (a) to employ any device, scheme, or artifice to defraud,
>
> (b) to make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or

[4] Federal securities laws are limited to regulating the process whereby information is disclosed in connection with securities transactions. State laws, as interpreted by state regulatory bodies, are not limited in this way, and most state laws have defined transactions that they deem to be "unfair" and that are prohibited without regard to the extent and accuracy of disclosure. In practice, the difference is largely theoretical because the SEC will usually attempt to use its regulatory authority to make it difficult to engage in transactions that the SEC believes to be substantially unfair, while state regulators will ordinarily grant exceptions to unfairness prohibitions in exchange for restrictions on sales to persons most likely to be victimized by any unfairness.

> (c) to engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security.

This requirement sets a standard for honesty and fair dealing in connection with securities transactions that is considerably more stringent than the standard applicable in other commercial contexts, in which actual fraud is unlawful, but in general the parties to an agreement are charged with protecting their own interests.[5]

Under this provision, a purchaser or seller of a security has a legal claim upon a showing that the counterparty made a false statement of a material fact (a material fact being a fact that a reasonable person would consider to be important in connection with the related investment decision). These claims are generally known as "section 10b-5 claims," referring to the regulation under which they exist. Section 10b-5 does not prohibit material omissions unless the information omitted was necessary to make a statement that was made not misleading. Accordingly, there is no *general* duty of complete disclosure in connection with securities transactions. As described below, however, there are numerous rules under which specific disclosure is required.

In particular, case law has, since the 1970s, held that, if a party to a securities sale is in possession of material, nonpublic information with respect to the business whose securities are the subject of the transaction, that party must disclose the information to the other party (or determine that the other party also has that information) in such a way that the other party can take that information into account in making its decision with respect to the transaction. Nonpublic information is information that has not been made available to the general public by press release, regulatory filing, or other method. The requirement is obviously most applicable to businesses buying or selling their own securities or to members of management of the business engaged in such transactions. However, the scope of the requirement is not limited to those persons, and anyone engaged in a securities transaction can be liable for breach of the requirement if he or she goes through with the transaction without making the required disclosure. A breach of this requirement is actionable by the counterparty to the transaction, who may sue to recover the lost value of the investment, if any.

A person may have section 10b-5 liability if that person (known as a "tippor") improperly provided information to a third party who then improperly traded based on that information. Thus, an officer, director, or employee of a business may have section 10b-5 liability, even if he or she did not actually trade based on the information or profit from any such trade, if he or she improperly provided material nonpublic information to someone who did trade. If the officer, director, or employee provided the information in his or her capacity as an agent of the business, the business itself may be liable, which is why it is important for businesses whose securities are traded on any regular basis to take appropriate steps to prevent such disclosures.

There are a number of limitations to the scope of section 10b-5 liability. For example, a tippor can be liable only if the provision of the information was in some way in violation of a duty of the tippor *not* to provide the

[5] The application of different standards for securities transactions and normal commercial transactions has raised numerous issues concerning which standard is applicable to statements that are made in a commercial context but are seen and possibly relied on by parties in a securities transaction. As a very general proposition, a statement made in a regular commercial context that does not have the purpose or probable effect of conditioning the related securities market is not held to the securities standard. The matter is complex, however, and companies engaged in offering securities should discuss with counsel the appropriate policy with regard to general commercial disclosures.

information. Inadvertent or fortuitous disclosures or disclosures for a proper business purpose cannot be the basis for tippor liability. Similarly, a person who declined to participate in a securities transaction cannot sue under section 10b-5 based on a claim that material information in the possession of the potential counterparty would have resulted in a decision to go through with the transaction. In general, however, trading while in possession of material nonpublic information can be the basis for a claim by the counterparty if the investment decision turns out to have been a poor one.

It is critical to keep in mind that, unlike the rules relating to registration and exemption discussed below, section 10b-5 applies to all sales of securities and all persons engaged in such sales. It applies to both sellers and buyers, and both to securities that are required to be registered as a condition of sale and to those that are exempt from such requirements. In particular, businesses involved in raising money through securities sales may tend to focus on the registration and exemption requirements and might forget that the section 10b-5 rules apply as well. Such a failure can have serious consequences, even if all of the registration and exemption rules are carefully observed.

B. Registration and Exemption Rules. Federal and most state securities laws impose duties on persons who propose to offer or sell securities. Unlike the section 10b-5 rules described above, these rules apply only to sellers of securities and do not impose any duty on buyers.

The core concept of these rules is that a security that is to be sold must be registered unless either the security or the contemplated transaction is exempt. Registration consists of filing a registration statement with the SEC or relevant state authority that meets the requirements for such documents. In theory, absent objection from the relevant authority within a prescribed period of time, the securities can be sold as long as a disclosure document, usually known as a prospectus, is delivered to the buyer in time to permit the buyer to use the information contained therein to make an informed investment decision. In practice, the SEC has made clear that, except in situations generally involving large, established companies, it expects to review and comment on the registration statement, after which there will follow a dialogue with the SEC staff, resulting in one or more amendments being filed and reviewed. Once the SEC staff is satisfied with the registration statement, it "declares" the registration statement effective and sales can take place. While the issuer and the SEC are in discussions regarding the content of the final registration statement, offers can be made by means of a preliminary form of prospectus.

Billions of dollars' worth of securities trade every day in the United States, and it should be obvious that the cumbersome process of registration does not apply to the overwhelming majority of such sales. Most of these sales occur under a registration exemption that exempts sales by persons who are not the issuer of the security, who are not affiliated with the issuer, and who are not underwriters of the securities or dealers in securities. Separate exemptions cover most sales by dealers in securities and by underwriters after a period of time has elapsed from the underwriting, thus allowing regular market transactions to proceed in the ordinary course without precondition.

Other exemptions apply to certain kinds of securities, regardless of the type of transaction involved. Of particular interest to energy companies, sales of securities that are issued or guaranteed by a government entity in the United States, such as municipal bonds and other forms of governmental instruments that are often issued to support a particular project, are exempt from registration without regard to the kind of transaction in which they are sold. As noted above, however, the exemption is from the registration requirements only. The requirements of section 10b-5 will apply to the sale, and other securities laws may either apply to the sale itself or be triggered by the fact that the sale took place.

Given the breadth of these exemptions, the registration rules are an issue mostly for four groups: (1) businesses seeking to raise capital by issuing their own securities (issuers); (2) directors, senior managers, general partners, and persons with equivalent management responsibility, and substantial equity holders in connection with reselling securities of the business that they own or manage; (3) owners of "restricted securities" in connection with the resale of those securities; and (4) underwriters of securities. Each of these categories is discussed below.

IV. Sales by Issuers.

A. Public Offerings. Issuers raising capital by selling their securities are generally faced with a choice of registering the securities to be offered and sold or complying with the requirements of an exemption. Any securities can be sold without meaningful restriction if the issuer files a registration statement and delivers a prospectus to each investor. Securities sold pursuant to registration are unrestricted, except those purchased by affiliates or underwriters, so they are freely tradable in the hands of the general public.

One of the results of a registered securities offering is that the issuer will become a "public company." As such, it will be subject to the reporting requirements of the Securities Exchange Act of 1934 (the "Exchange Act") and will have to file with the SEC annual and quarterly reports, and other reports upon the occurrence of specific events. This obligation will continue for at least a year and thereafter as long as there are more than a specified number of record holders of the securities (in most cases, 300). If the publicly owned securities are equity, numerous other provisions of the Exchange Act are also likely to apply, including provisions relating to the holding of stockholders meetings; trading of the securities by executive officers, directors, and holders of more than 10 percent of the securities; reports required to be filed by holders of more than 5 percent of the securities; and the conduct of tender offers for the securities. Finally, although it is not required by law, the likely result of a registered securities offering is that the securities will be listed on an exchange or other trading mechanism, causing the issuer to be subject to the rules of that facility.

For a company that is not already public, a decision to do a registered securities offering represents a choice of strategic direction in addition to the selection of a capital raising method. An initial public offering generally takes from six months to a year to consummate. The expense is quite large, and a considerable amount of the expense is not avoidable if the offering does not work. The volatility of capital markets creates risk that an offering that seems sensible at the time of the decision to proceed may appear less attractive at the time it is consummated. Following the offering, there is significant additional recurring expense. There is also a need to publicly report information that would normally be considered proprietary in a private company. Finally, the need to establish and maintain constructive investor relationships is time-consuming and can lead to management decisions that may not optimize the potential of the business.

The advantages of being a public company include access to public capital markets, which, after an initial period of time, can be accessed quite quickly and efficiently; increased flexibility in structuring acquisitions; and increased liquidity for stockholders. In general, a decision to go public is one involving economies of scale. In a larger business, the advantages of public status, combined with the ability to amortize the cost over a larger capital base, can make the alternative attractive. Smaller businesses are generally well advised to remain private if they are able to do so.

B. Private Placements. Issuers that are and intend to remain private generally rely on one or more of several exemptions, the general requirement for which is that the securities are not sold, either directly or indirectly, to the general public.[6] These exemptions, available only to issuers and generically known as "private offering exemptions," allow issuers to offer and sell securities without registration as long as (1) they are offered and sold only to a limited group of investors, and (2) the issuer takes steps to prevent immediate resale of the securities by restricting their resale. The securities so issued and so restricted are referred to as "restricted securities."

Offer Restrictions. To qualify for the exemption for both the offer and the sale, the offer must be made without "public advertizing or solicitation." Opinions vary as to the exact meaning of "public advertizing or solicitation," but the general practice is that offers or solicitations must be made individually to specific potential investors that the issuer has determined to be in a category to which such offers can be made within the limits of the exemption. Any kind of offer or solicitation made by means of any mass media, such as newspaper advertisements, mass emails, or other forms of general distribution in which the individual recipients are not known and identified as proper recipients, constitutes public solicitation in violation of the restriction. Using open-access Web sites constitutes public solicitation if they contain an offer of securities, but Web sites that are restricted to a group of potential investors whose suitability has been determined in advance are permitted.

It is important to note that the use of public advertising or solicitation in connection with a private placement not only invalidates the exemption for those who were publicly solicited but also for the offering as a whole, thus probably leaving the issuer without an available exemption for the offering.[7] In this situation, it is likely that the issuer will be unable to proceed with any kind of offering for a six-month period (known as a "cooling off period").

Investor Identity Restrictions. Federal securities regulations permit private placements to be made to an unlimited number of accredited investors. In general, financial institutions, institutional investors of significant size, and relatively wealthy individuals are accredited investors.[8] If the total amount to be raised in the offering exceeds $5 million, each investor must also be financially sophisticated enough (or have retained an advisor with such sophistication) to understand the merits and risks of the investment.

The regulations also permit private placements to be made to up to 35 nonaccredited investors. This provision has some limited utility in specific instances but is rarely used. The most important reason is that the

[6] The use of private placement exemptions is not limited to private businesses. Public companies regularly engage in private placements as part of their capitalization program.

[7] In a further draconian twist, the SEC takes the position that a failed private placement that is immediately converted into a public offering violates a public offering rule that prohibits oral or written offers before the registration statement is filed.

[8] An individual is an accredited investor if (1) his or her net worth exceeds $1 million, (2) his or her income exceeded $200,000 in each of the last two years, or (3) his or her joint income with spouse exceeded $300,000 in each of the last two years.

informational requirements are substantially greater if the offering is made to any nonaccredited investor. Additional reasons include the fact that the effort required to solicit nonaccredited investors is disproportionate to the amount that they can prudently invest and the fact that selling securities to nonaccredited investors increases the risk of legal action if things do not go well for the investment.

Most private placements are made to a small group of institutional investors and/or very wealthy individuals. In the case of newer and smaller businesses, the former are known as "venture capital investors" and the latter are known as "angels."[9] In either case, the investment is likely to be in the form of preferred, convertible stock. More mature companies are funded by a group of institutions generally referred to as "mezzanine investors." These investments are more likely to be debt offerings, possibly with an equity piece as an inducement. Fully mature companies and projects have access to a wide variety of private funding alternatives, and it is not uncommon for a project to be funded at various levels by different institutional investors.

C. **Transitions Between Private and Public Funding Strategies.** A number of historical anomalies in the securities laws have resulted in problems for an issuer that wishes to change strategies in the middle of a funding effort to go from a public to a private, or from a private to a public, offering. Briefly stated, the problem for an issuer that has tried to do a public offering and was either unsuccessful or now perceives a greater benefit from a private placement is that the public offering will be considered to be public advertising or solicitation for the private placement, thus making the private placement exemption unavailable. In the view of the SEC, this problem occurs from the moment that the issuer files a registration statement relating to the public offering, even if no active solicitation of investors occurred.

Similarly, an issuer that has been trying to do a private placement but decides to do a public offering runs into problems because any offers made to prospective investors in the private placement will be considered offers of the publicly offered securities prior to filing a registration statement, in violation of rules prohibiting such offers.

In general, the SEC addresses both issues by regulations that prescribe a lapse period in which the issuer may not offer or sell securities, the observance of which separates the two offerings. It may also be possible to avoid the connection between the two offerings by offering a radically different form of security or otherwise making material changes in the opportunity offered (see Section IV.D below). Issuers should be aware, however, that a decision to switch from one format to the other may impose a significant delay in their financing arrangements.

D. **A Brief Introduction to Integration.** As noted above, offers and sales of securities may be exempt from registration if the nature and manner of the offering meet certain requirements. To determine whether the requirements have been met, it is necessary to define the "offering" that is required to meet the applicable requirement. Offers of securities deemed to constitute a single offering for this purpose are said to be "integrated."

There may be no area of securities law that gets as metaphysical as integration analysis. Obviously, a single entity offering stock to a number of investors at a given time is engaged in a single offering. However, a question arises

[9] It is also not uncommon for relatively small amounts of seed capital to be raised from friends and family at the very initial stages of a business. These investments also generally qualify under a private placement exemption, if properly conducted.

if an issuer is simultaneously offering stock to investors as a capital raising project and to employees on exercise of options that are a part of the issuer's compensation program. Similarly, if a company is doing a public equity offering at the same time that it is restructuring its securitized debt arrangements with institutional lenders, an integration question is raised. In a somewhat different way, if a number of related entities are simultaneously raising capital for a common project, an integration analysis is required.

The SEC has adopted regulations that specifically cause offerings made in certain conditions not to be integrated. For example, offerings separated by a specified lapse of time in which the issuer does not make similar offers or sales are nonintegrated by regulation. Where no such specific regulation applies, however, an analysis of the underlying issues is unavoidable and the outcome is often uncertain.

E. Structures Available to Issuers with Publicly Traded Securities. Issuers that have established public trading markets in their securities have the benefit of relatively easy access to public capital markets for future offerings. However, for all but the largest public companies, a private placement may often be faster and cheaper than a public offering. The downside, however, is that the restrictions on resale that result from a private placement reduces the value of the security to the investor and may limit the kind of investors that can invest in it.

To address these issues, various investment banks offer private sales of securities that are quickly registered for resale by the investor, thereby making them liquid in the hands of the investor. These transactions, known as "PIPE" have, at least theoretically, the advantage of allowing an issuer to arrange a quick financing at a price more closely resembling the price the issuer could expect in a public offering.

As discussed above, the SEC has crafted rules imposing restrictions on resale to prevent an issuer from using private placements as a mere conduit to the public. If, however, the resale happens in a registered public offering, some of the SEC's concerns are alleviated because the public investors get the protection of registration as they would if the offering had been public in the first place. Accordingly, subject to certain timing restrictions, the SEC permits registration of the securities immediately following the private placement and the resale of the securities once the registration statement becomes effective.

While the theory remains valid, a number of issues have arisen in practice. For example, investors in PIPE transactions still require a discount to market because of the short-term restriction on resale, and the discount may be unpopular with the issuer's existing investors.[10] More troubling, to both the SEC and the existing investors, it is widely believed that some PIPE investors are earning a very significant short-term profit without being at risk by arranging short sales or comparable arrangements in advance of the PIPE offering that they cover with the securities purchased in the PIPE offering. The short sales themselves drive down the price of the security in advance of pricing, thereby increasing the effective discount while the investment risk is eliminated by the fact that the investor zeros out its position in the security at purchase.

[10] Similar mechanics also commonly affect the market for securities following the announcement of a public offering, so the effective discount may be unavoidable and the decision to do a public offering or a PIPE may be a balancing test.

These concerns have caused PIPE transactions to come under some suspicion with both stockholders and regulators. The structure remains valid and viable but should be considered only in light of the potential market and regulatory concerns.

V. Sales by Holders of Restricted Securities and Affiliates. Affiliates of an issuer are defined as people or entities that control, are controlled by, or are under common control with the issuer. In general, affiliates include senior management and large stockholders of the issuer as well as parent, subsidiary, or other related entities.

As noted above, normal sales by persons other than the issuer of a security and holders of restricted securities are exempt from registration without any meaningful precondition. Sales by affiliates of the issuer are also subject to restriction and can be resold only upon satisfaction of certain conditions.[11]

Resales of Restricted Securities. Certificates representing restricted securities normally contain a legend indicating that the securities may not be resold except pursuant to registration or an applicable exemption. In a sense, the legend states the obvious, since all sales of securities are subject to that restriction. The legend reinforces this requirement and also usually indicates that the issuer will not recognize or assist with any sale that does not meet this requirement to its satisfaction.

As described above, restricted securities can be resold pursuant to registration as soon as the registration statement is effective. If no effective registration statement exists for restricted securities, an exemption will be required. By far the most commonly used exemption for resales of restricted securities exists under Rule 144, which generally permits such resales (1) after a period of time in which the reseller has held the securities, if certain conditions are met, or (2) without condition after a longer period, as long as the reseller is not an affiliate. The conditions, if applicable, relate to the manner in which the securities are sold, the number of securities sold in relation to either the number of publicly traded securities or the trading volume, the need to file a report with respect to the sale with the SEC, and the need for publicly available information about the issuer. For most sellers, meeting the conditions is not onerous except that doing so takes time and also takes the sale out of the trading routine under which unrestricted securities are normally sold.

Once the restricted securities can be resold without condition, it is customary for the holder of the certificates to apply to the issuer to have new certificates issued without the legend, which no longer applies and the existence of which can delay and complicate a trade, even when an ordinary trade is permissible.

Resales by Affiliates. Affiliates reselling restricted securities are subject to all of the restrictions applicable to those securities in the same way that the restrictions apply to nonaffiliates. In addition, affiliates must continue to meet all of the conditions applicable to resales under Rule 144, without time limit.[12] Affiliates selling unrestricted securities (for example, securities that they purchased in the open market or in a public offering) may do so at any time, subject to the applicable conditions.

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[11] These restrictions apply only to sales to which U.S. securities laws are generally applicable. Sales that take place entirely outside the United States may not be subject to limitation under U.S. securities laws.

[12] This restriction also applies to persons who, at the time of the resale, had recently been affiliates.

Institutional Trading in Restricted Securities. The limitations on resales of restricted securities do not apply to transactions entirely among qualified institutional buyers ("QIBs"). QIBs are generally very large financial institutions, such as banks and insurance companies, that the SEC has determined not to be in need of the protection afforded to less sophisticated investors under the securities laws. QIBs may freely trade restricted securities among themselves, and there are markets set up that facilitate such trading. The markets are, of course, restricted to QIBs.

Private Resales of Restricted Securities. As written, the private placement exemptions apply to sales of securities by their issuers, and there exists no express rule under which an investor can resell restricted securities by limiting the offer and sale of the securities in the same manner that the issuer would limit such offers and sales if it were making the offer under a private placement exemption. Nevertheless, it is generally accepted that the resale of a restricted security is exempt if it is made under circumstances in which the sale would have been exempt as a private placement if made by the issuer. The analysis supporting this theory is excessively convoluted, but the principle is well established.

Insider Trading Considerations. As noted above, compliance with registration or exemption requirements does not relieve any participant in a securities sale from the obligation to make adequate and timely disclosure of material nonpublic information. This consideration is a particular issue for resales by affiliates, which may regularly be in possession of material inside information and, even if they are not, may be assumed to be in possession of such information. To avoid either the reality or the appearance of a problem in this area, affiliates are well advised to consider carefully the timing of any sales of securities. In general, it is best to make such sales in the period closely following the release by the issuer of a periodic report on its condition. A number of issuers address this issue by creating policies (either mandatory or advisory) that discourage or prohibit trading except during periods in which such trading is least likely to pose a problem. The fact that any particular trade occurs in compliance with these policies does not ensure that there is no insider trading problem, and any and all such trades should be evaluated with the issue in mind.

The burdens that these considerations impose on affiliates can be alleviated, at least for the purpose of permitting affiliates to engage in a regular program under which they dispose of securities, by adopting a plan under which the securities are automatically sold at certain times and under certain conditions. An affiliate that adopts such a plan is deemed to have material nonpublic information only if it had the information at the time the plan was adopted. The affiliate's knowledge on the date of any particular sale is not relevant. Of course the plan must provide (subject to some general ability to make amendments to the plan from time to time) for the automatic execution of the sales.

VI. Securities Regulations Applicable to Non-U.S. Companies Raising Capital in the United States. U.S. securities laws and regulations impose substantial regulatory compliance obligations on U.S. issuers. This section explains under what circumstances non-U.S. issuers that raise capital in the United States will be subject to U.S. securities regulations, and provides an overview of the laws and regulations applicable to non-U.S. issuers.

In most circumstances, a non-U.S. issuer that offers and sells securities in the United States will be subject to the same offering requirements under the Securities Act of 1933 (the "Securities Act") as is a domestic U.S. issuer. As described above, federal and state securities laws have two principal components relating to securities offerings:

(1) registration requirements and (2) full disclosure provisions. Non-U.S. issuers cannot legally offer or sell securities to U.S. residents without first filing a registration statement with the SEC or complying with a statutory exemption from federal and state registration, if an exemption is available.[13] Absent an available exemption at the federal and state levels, if a non-U.S. issuer fails to file a registration statement when legally required, the SEC and applicable state-level securities administrators may bring enforcement actions against the foreign issuer, and the foreign issuer may be subject to civil lawsuits by subscribers who purchased securities in the offering.

Foreign issuers that offer or sell securities to U.S. residents also are subject to the second requirement, the antifraud provisions of federal law and state laws (collectively, the "Antifraud Provisions"). The Antifraud Provisions essentially require full and accurate disclosure of all material information about a securities offering. Specifically, the Antifraud Provisions make it unlawful for any person in connection with the sale of any security to make any untrue statement of a material fact or to omit a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading.[14] Thus, in a typical offering, even if the offering is exempt from registration under federal and state securities laws, the foreign issuer prepares and distributes to prospective purchasers an offering memorandum disclosing all material facts about the issuer and the offering in order to comply with the Antifraud Provisions. A current and detailed disclosure document (comparable to an offering memorandum or prospectus) would include a description of the business conducted by the issuer and the securities being offered, audited financial statements of the issuer, and risk factors relating to the issuer and the securities being offered. If a foreign issuer offers and sells only to accredited investors and avails itself of the safe harbor exemption provided by Rule 506 under Regulation D, the prospectus requirements may be less fulsome than otherwise would be the case.

Foreign issuers that sell securities to U.S. residents and are not able to avail themselves of an exemption from registration are required to file a registration statement with the SEC in connection with an offering. The nature of the registration statement and the extent of the detail required therein is described below and will depend on the extent of the contacts of the foreign issuer with the United States.

In addition to the registration requirements of the Securities Act and state-level registration requirements that apply to the offer and sale of securities, Exchange Act section 12(g) requires an issuer to file an Exchange Act registration statement regarding a class of equity securities within 120 days of the last day of its fiscal year if the number of its record holders is 500 or greater and its total assets exceed $10 million. A foreign issuer that has not conducted a registered public offering in the United States nevertheless may accrue 500 holders in the United States either by having made successive offerings into the United States that are exempt from registration or by U.S. residents having made open-market purchases of the securities of the foreign issuer on exchanges located outside of the United States. As we describe below, the U.S. securities laws provide some foreign issuers with exemptions from the Exchange Act registration requirements.

[13] Securities Act § 5.

[14] Exchange Act § 10(b) and Rule 10b-5 thereunder; Securities Act § 11.

A. Foreign Private Issuers. Foreign issuers with no shareholders in the United States and no contacts with the United States are not subject to U.S. securities laws and regulations. Conversely, foreign issuers may have enough shares held by U.S. residents and sufficient business contacts with the United States to be deemed by the SEC to be U.S. domestic issuers.[15] These foreign issuers are subject to the same regulations as domestic U.S. issuers. Between these two extremes, the SEC provides regulatory accommodations to non-U.S. companies with shareholders in the United States that it deems to be "foreign private issuers" because the number of shares held by U.S. holders is beneath a regulatory threshold and the foreign issuer's contacts with the United States also fall below a regulatory threshold.

The SEC has in several areas recognized that requirements that it imposes on domestic issuers would be unduly burdensome if imposed on foreign issuers with minimal contacts to the United States, either because of practical impediments to compliance or because of significant conflicts between the regulation and cultural or business practices in the country of origin. In these areas, where the SEC has determined that it can do so while maintaining the substantive requirements for shareholder and market information, it has adopted exemptive rules or alternative compliance requirements available only to foreign companies. To avoid the use of these provisions by substantially domestic companies that happen to have foreign incorporation, the SEC has adopted a definition of a "foreign private issuer."

Importantly, an issuer's status as a foreign private issuer may change with developments in its corporate operations. In such circumstances, the benefits of being a foreign private issuer are promptly suspended. Losing foreign private issuer status unexpectedly will pose very serious regulatory challenges for a foreign issuer. Companies should be well aware of the criteria to qualify as a foreign private issuer and should avoid losing that status unintentionally through mergers, acquisitions, securities issuances, project finance, or other operations.

1. **The Foreign Private Issuer Test.** Exchange Act Rule 3b-4(c) defines a foreign private issuer as

> any foreign issuer other than a foreign government except an issuer meeting the following conditions as of the last business day of its most recently completed second fiscal quarter: (1) More than 50 percent of the outstanding voting securities are directly or indirectly held of record either by residents of the United States; and (2) any of the following: (i) The majority of the executive officers or directors are United States citizens or residents, (ii) more than 50 percent of the assets of the issuer are located in the United States, or (iii) the business of the issuer is administered principally in the United States.

One part of the definition is based on the company's level of U.S. shareholdings and the other on its business contacts with the United States. A non-U.S. company may have to analyze both parts of the definition in order to determine whether it is a foreign private issuer. When calculating record ownership, an issuer must "look through" the record ownership of brokers, dealers, banks, or other nominees that hold securities for the account of

[15] *See* Release No. 33-6433 (Oct. 28, 1982).

their customers, and determine the residency of those customers. To apply this test, the company must "look through" record ownership in a maximum of three jurisdictions: the United States, the company's home country (*i.e.,* the country in which it is incorporated or organized), and the jurisdiction where its primary trading market is located, if that is different from its home country. The response to these inquiries may produce additional layers of nominees, and the inquiry should continue with those nominees.

2. **SEC Regulatory Accommodations Given to Foreign Private Issuers.** As more fully described above, the Exchange Act imposes substantial reporting and other burdens on companies having a class of securities registered under the Exchange Act. Some of the regulatory burdens imposed on companies with securities registered under the Exchange Act would be difficult to apply to foreign companies, either because the regulations would conflict with similar regulations of the company's jurisdiction of incorporation or because their enforcement would involve the United States in the inappropriate regulation of activity outside the United States.

a. **Rule 12g3-2 Exemption of Foreign Issuer Equity Securities.** To reduce the registration burden upon foreign private issuers with limited U.S. nexus, the SEC adopted Rule 12g3-2 establishing two exemptions from the section 12(g) registration requirement.

The first exemption, under Rule 12g3-2(a), exempts a foreign private issuer whose equity securities are held of record by less than 300 U.S. residents, although it has 500 or more record holders on a worldwide basis. A foreign private issuer that relies on this exemption must reassess the number of its U.S. security holders at the end of each fiscal year in order to determine whether the exemption remains valid.

The second exemption, under Rule 12g3-2(b), focuses on investor access to material information provided to the SEC by the foreign private issuer and is available regardless of the number of its U.S. security holders.

All foreign private issuers that meet these requirements immediately are exempt from Exchange Act registration without having to apply to or notify the SEC concerning the exemption. To remain eligible for this exemption (in addition to maintaining its foreign listing, continuing to meet its trading volume requirement, and not incurring Exchange Act reporting obligations), a foreign private issuer must continue to electronically publish material non-U.S. disclosure documents in English for subsequent fiscal years promptly after the information has been made public.

b. **Exemption from Exchange Act Sections 14 and 16 for Foreign Private Issuers.** The Exchange Act provides that securities registered by a foreign private issuer are exempt from sections 14(a), 14(b), 14(c), 14(f), and 16 of the Exchange Act. The section 14 provisions listed above impose filing and informational requirements on public companies in connection with the solicitation of proxies, the holding of annual or other meetings of the shareholders, or certain changes in the composition of the board of directors. Section 16 (1) requires officers, directors, and holders of more than 10 percent of a class of equity securities registered under the Exchange Act to file regular reports with respect to their ownership of such securities; (2) imposes penalties on such persons if they engage in certain trading practices including both sales and purchases of such securities within a six-month period; and (3) prohibits short sales of such securities by such persons.

c. **Special Disclosure Rules for Foreign Private Issuers.** A traditional impediment to foreign companies' access to U.S. public capital markets had been the very specific requirements for disclosure imposed by the SEC on domestic public companies. Many foreign companies have found these requirements to be burdensome or prohibitive. One problem was that financial information was often required to be presented in a format that the foreign company did not ordinarily generate and could not generate without substantial effort and expense. Another was that detailed disclosure of certain information about officers, directors, and shareholders, in particular information relating to compensation, violated standards of individual privacy commonly accepted in many foreign countries.

To address these concerns, the SEC has adopted alternative disclosure forms under both the Securities Act and the Exchange Act that are available only to foreign private issuers and that allow for reduced or modified disclosure. For registrations under the Securities Act, the SEC has provided Forms F-1 and F-3 as alternatives to Forms S-1and S-3, respectively. For both registration applications and annual reports under the Exchange Act, the SEC has provided Form 20-F as an alternative to Form 10 and Form 10-K.

The principal differences between the special forms and their domestic counterparts involve financial statements and compensation. The SEC allows foreign private issuers to use financial statements prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, without reconciliation to U.S. generally accepted accounting principles ("U.S. GAAP").[16]

Unless the company makes more detailed information available to its shareholders or the public (in which case such information must also be presented), officer and director compensation information may be presented in substantially less detail than is required of domestic companies.

Quarterly and other nonannual reporting under the Exchange Act is even less burdensome for foreign private issuers. Quarterly reports on Form 10-Q and episodic reports on Form 8-K are not required. In lieu thereof, a foreign private issuer is required to file, under Form 6-K,11 information that it (1) makes or is required to make public pursuant to the law of the jurisdiction of its domicile, (2) files or is required to file with an exchange on which its securities are traded and that is made public by the exchange, or (3) distributes or is required to distribute to its shareholders.

d. **Other Accommodations.** In addition to the foregoing accommodations, the following is a list of other significant regulatory accommodations the SEC grants to foreign private issuers.

- No "short-swing" trading liability is imposed on insiders who purchase and sell securities within a six-month period.
- Foreign private issuers are not subject to the SEC's prohibition on selective disclosure of material information (Regulation FD).

[16] Acceptance from Foreign Private Issuers of Financial Statements Prepared in Accordance with International Financial Reporting Standards Without Reconciliation to U.S. GAAP, Securities Act Release No. 33-8879, Exchange Act Release No. 34-57026 (Dec. 21, 2007).

- Fewer restrictions exist on offers and sales of securities outside the United States for companies relying on the SEC's Regulation S "safe harbor" from the U.S. registration requirements.

Other provisions of the Exchange Act are applicable to foreign private issuers as well as domestic companies. In particular, section 13, which regulates tender offers by an issuer for its own stock and requires reports of persons who acquire more than 5 percent of a class of registered securities, and Sections 14(d) and (e), which regulate tender offers for registered securities by persons other than the issuer, apply to both domestic companies and foreign private issuers.

3. **Losing Foreign Private Issuer Status.** When a foreign issuer ceases to qualify as a foreign private issuer, the consequences are immediate. Among other things, the issuer's communications are subject immediately to the selective disclosure prohibitions of Regulation FD. Insiders must file reports of beneficial ownership within 10 days after the issuer's determination that it no longer is a foreign private issuer. The issuer's first quarterly report on Form 10-Q will be due 45 days after the end of its current fiscal quarter. The issuer must report its financial statements in U.S. dollars and apply U.S. GAAP in preparing those statements. Companies planning to offer securities in their home market, or anywhere else outside the United States, without U.S. registration will have to comply with the more restrictive requirements of Regulation S that apply to U.S. companies (described below).

The SEC has indicated that a company should assess its foreign private issuer status on the last day of each of its fiscal quarters and upon completion of the following events:

- Any purchase or sale by the issuer of its equity securities (other than in connection with an employee benefit plan or compensation arrangement, a conversion of outstanding convertible securities, or an exercise of outstanding options, warrants, or rights);

- Any purchase or sale of assets by the issuer other than in the ordinary course of business; and

- Any purchase of equity securities of the issuer in a public tender or exchange offer by a person unaffiliated with the issuer.

An issuer must determine its eligibility to use an SEC form restricted to use by foreign private issuers at the time it files the form. If its status changes after filing, the company does not have to withdraw its previous filing and refile on a different form. If the company files a Form F-3 registration statement for a "shelf" offering and later ceases to be a foreign private issuer, it may continue to make "take downs" from the shelf that only require filing a prospectus supplement.

a. **Being Prepared.** If an issuer believes that it will cease to be a foreign private issuer, it should have a plan to comply with enhanced reporting requirements. Preparation may include:

- Notifying insiders that their sales and purchases of securities may subject them to "short-swing" trading liability and the obligation to report beneficial ownership under section 16 of the Exchange Act;

- Preparing to file condensed, consolidated financial statements for quarterly reports using U.S. GAAP (including applicable subsidiaries);

- Converting to a U.S. dollar reporting; and

- Developing policies governing corporate communications with shareholders and market professionals.

B. Canadian Issuers: Multijurisdictional Disclosure System. The U.S. securities laws offer certain accommodations to Canadian issuers under the U.S. Multijurisdictional Disclosure System (the "MJDS"). The MJDS accommodations are in addition to the foreign private issuer accommodations, and all Canadian issuers that qualify as foreign private issuers remain eligible to use the foreign private issuer disclosure system. Canadian issuers that use the MJDS remain subject to U.S. civil liability and the Antifraud Provisions, and financial statements for certain MJDS offerings must be reconciled to U.S. GAAP.

MJDS permits qualified issuers chartered in Canada to offer debt and equity securities, file continuous disclosure information, and register exchange offers and business combinations in the United States by filing with the SEC and distributing to U.S. investors disclosure documents prepared and reviewed under Canadian law. "Substantial" Canadian issuers, whose performance can be followed through publicly available information, are able to access the U.S. capital markets and comply with their U.S. registration and reporting obligations by filing Canadian-prepared disclosure documents with the SEC under cover of an MJDS form. The MJDS also permits qualified Canadian issuers to use Canadian disclosure documents to meet the SEC's tender offer requirements. The MJDS introduced Forms F-7, F-8, F-9, F-10, and F-80 to assist Canadian issuers when registering under the Securities Act; Form 40-F to facilitate registration and reporting for Canadian issuers under the Exchange Act; and Schedules 13E-4F, 14D-1F, and 14D-9F to simplify tender offer filings for Canadian issuers under the Exchange Act.

VII. Regulation S: Raising Capital Offshore. Regulation S promulgated under the Securities Act provides that any offer or sale of securities that occurs within the United States is subject to the registration requirements of section 5 of the Securities Act, and that any offer or sale of securities that occurs outside the United States is not. Regulation S offers two safe harbors when determining whether an offer and sale is made outside of the United States. The first safe harbor applies to offers and sales by the issuer, securities professionals involved in the distribution process by contract, their respective affiliates, and persons acting on behalf of any of them. The second safe harbor applies to resales by persons other than the issuer, securities professionals involved in the distribution process by contract, their respective affiliates (except certain officers and directors), and persons acting on behalf of any of them. Regulation S applies to issuers differently based on the issuer's nexus to the United States.

Both safe harbors have two general conditions. First, the offer or sale of securities must be made in an "offshore transaction." For a domestic U.S. issuer that is not publicly traded, this requires that (1) no "offer" may be made to any person physically located in the United States, and (2) each purchaser of securities must be outside the United States at the time of the decision to purchase the security. The second general condition is that no "directed selling efforts" be made in the United States that would condition the U.S. market and encourage people to attempt to participate in the offering offshore. Securities sold offshore by U.S. issuers, affiliates, and distribution participants pursuant to Regulation S are treated as "restricted securities" within the meaning of Rule 144 (see above) and continue to remain "restricted securities" notwithstanding that they are resold outside the United States pursuant to Regulation S.

If an issuer attempts compliance with any rule in Regulation S, that does not constitute an exclusive election. A person who offers or sells securities in reliance on Regulation S may also rely on any other applicable exemption from registration. The failure to meet the terms of either safe harbor does not create a presumption that the transaction is subject to section 5. Therefore, some issuers may seek to avail themselves of both Regulation S and the exemption granted by section 4(2) of the Securities Act.

STOEL RIVES LLP
ATTORNEYS AT LAW

Erin L. Anderson

Experience

Erin Anderson practices as Of Counsel in the Natural Resources and Land Use practice group.

Erin has extensive experience in representing property owners, municipal entities, and developers, including energy facility developers, in permitting major projects. Erin's experience on behalf of property owners includes planning, negotiating development agreements, and successful defense of issued permits on appeal. On behalf of public sector clients, she has negotiated water supply, delivery, and use policies and agreements; annexation and development agreements for small and large-scale planned mixed development projects; and has guided major capital facility projects from inception through SEPA, innovative cost-sharing negotiations, alternate procurements and permitting, through completion of construction. Erin has been successful in both bringing and defending appeals brought under Washington's Growth Management and Land Use Petition acts. Erin also represents wind energy facility developers in both local land use and Washington Energy Facility Site Evaluation Council proceedings.

Before joining Stoel Rives, Erin worked for 11 years at the central Washington firm of Cone Gilreath, where she served as the Cle Elum city attorney and South Cle Elum town attorney, and represented various regional governmental agencies and districts. While representing Cle Elum, she assisted in creating strategies to enable economic growth, manage utility rates, and promote capital facilities construction in conjunction with the development of Suncadia, a 6,000-acre major four-season destination resort adjacent to Cle Elum. From 1993-1996 she was employed as an associate at Halverson Applegate, P.S. in Yakima, where she worked extensively on zoning, facilities permitting, and impact fees issues under various statutory regimes.

Representative Work

- *J.R. Simplot, Inc. v. Knight*, 139 Wash. 2d 534, 988 P.2d 955 (1999)
- *Lathrop v. State Energy Facility Site Evaluation Council*, 130 Wash. App. 147, 121 P.3d 774 (2005)
- *SCM Group USA, Inc. v. Protek Machinery Co.,* 136 Wash. App. 569, 150 P.3d 141 (2007)
- *Tugwell v. Kittitas County*, 90 Wash. App. 1, 951 P.2d 272 (1997)

Professional Honors and Activities

- Member, Real Property, Environmental Land Use and Probate & Trust sections

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Education

- University of Washington School of Law, J.D., 1993
- University of Idaho College of Law, 1991
- Central Washington University, B.A., 1990, *summa cum laude*

Admissions

- Oregon
- Washington

Languages

- Portuguese

Erin L. Anderson

Presentations

- "Law of Renewable Energy: Key Substantive Issues in Siting and Permitting Renewable Energy Facilities," EUCI webinar, Jun. 1, 2009
- "Vehicle Electrification and Charging Infrastructure Development - Funding Opportunities and Challenges under the 2009 American Recovery and Reinvestment Act," 5th Annual Power UP! Electrifying Transportation Summit, Wenatchee, WA, May 28, 2009
- "Key Issues in Wind Power Project Economics," AWEA Wind Resource & Project Energy Assessment Workshop, Portland, Oregon, Sep. 23, 2008
- "Environmental Issues for Washington Wineries and Vineyards," Winery and Wine Distribution Law, Quincy, Washington, Aug. 11, 2008
- "Siting and Permitting Challenges," Renewable Energy in the Pacific Northwest, Seattle, Washington, Aug. 7-8, 2008
- "Land Use and Water Rights Issues Affecting Washington Vineyards and Wineries," Annual Stoel Rives, LLP Wine Law Seminar, Walla Walla, Washington, Jun. 24, 2008
- "Any Way the Wind Blows: Wake effect and Its Impact on Upwind and Down Wind Facilities," AWEA Windpower 2008, Houston, Texas, Jun. 1-4, 2008
- "Wind Energy in the Pacific Northwest," NEBC Canada-Making Renewable Projects Happen, Portland, Oregon, Apr. 24, 2008
- "Alternative Procurement and Funding in Washington State," Land Use in Southwestern Washington, Vancouver, Washington, Feb. 11-12, 2008
- "Economics of the River: Wind Power in the Pacific Northwest," The Mighty Columbia, Seattle, Washington, Nov. 15-16, 2007
- "Washington Oil and Gas Land Use and Environmental Issues," Northwest Energy Association Annual Symposium, McMinnville, Oregon, Sep. 21, 2007

Publications

- "BonaFide Purchaser Doctrine," Washington State Bar *Association Real Property Deskbook Ch. 41,* 1997, 2000-2002 Supplement
- "Washington Supreme Court Affirms State Siting Council's Authority to Permit Alternative Energy Facilities," *Renewable Energy Law Alert,* Nov. 21, 2008
- *The Law of Ocean and Tidal Energy, A Guide to Business and Legal Issues*, Stoel Rives LLP, Second Edition, 2008
- "Permitting and Land Use," *Lex Helius: The Law of Solar Energy, A Guide to Business and Legal Issues*, Stoel Rives LLP, First Edition, 2008

Civic Activities

- Volunteer, Legal Aid Service of Oregon, Multnomah County Office, Portland, Oregon

STOEL RIVES LLP
ATTORNEYS AT LAW

Gary R. Barnum

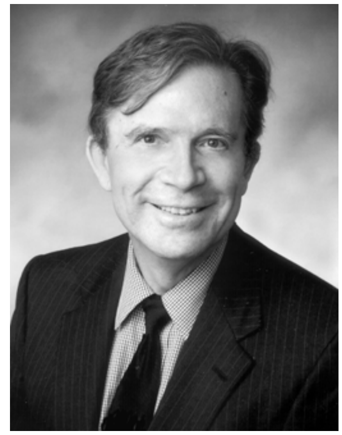
Experience

Gary Barnum is a member of the firm. He has a broad corporate practice, with an emphasis on finance, tax-motivated transactions, partnerships, mergers and acquisitions. His primary focus in recent years has been the utility industry, with particular emphasis in the renewable energy area. However, he has also a wide range of experience representing financial service companies, manufacturers, retailers, and other industry groups.

Gary has handled a wide range of transactions, including partnership (and limited liability company) formations and syndications, mergers and acquisitions, public offerings, syndicated credit facilities, private placements, leveraged lease and project financings, utility financings, asset backed financings and securitizations, commercial paper programs, and derivative arrangements. In addition to significant experience in non-recourse and other project financing arrangements, he has also been involved with a wide variety of tax-motivated transactions, including low-income housing credits and state tax credit programs, Federal and state energy credit transactions, and industrial development and pollution control projects.

Representative Work

- Represented equity investors in connection with investments in IRC §45-qualified Wind Projects throughout the United States.
- Represented developer in connection with the financing of a 10MW geothermal electric-generation project.
- Represented a power generation company in separate transactions in connection with purchase and sale of multiple power projects located in California, Colorado, Maine, Michigan and Nevada.
- Represented a power generation company in a asset-backed private placement of notes, combined with a term loan facility, involving the financing of multiple natural gas-fired combined cycle facilities.
- Represented a power generation company in the sale of its general partnership and carried interest in a 240 megawatt natural gas-fired cogeneration power production facility (had previously represented this company in connection with the original construction financing, long-term financing, refinancing and syndication).
- Represented a power generation company in the sale of its general and limited partnership interest in a 25.3-megawatt waste-to-energy power production facility.



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Education

- University of Washington Law School, J.D., 1981, honors
- University of Oregon, B.A., 1977, high honors

Admissions

- Oregon
- Washington

STOEL RIVES LLP
ATTORNEYS AT LAW

Gary R. Barnum

- Represented a power generation company in the development, construction and financing of several waste-to-energy power production facilities.
- Represented a finance company in connection with the financing of several geothermal power production facilities.
- Represented a national syndicator in connection with multiple syndications to various institutional investors of investment funds engaged in the acquisition, development and operation of Federal tax-credit affordable housing projects throughout the United States.
- Represented developers in the development, construction and financing of Federal tax-credit affordable housing projects throughout the United States.

Professional Honors and Activities

- Listed in *Best Lawyers in America*, project finance, and structured and equipment finance sections, 2007, 2009
- Member, Business Section of the Oregon State Bar
- Member, Business Law Section of the American Bar Association

STOEL RIVES LLP
ATTORNEYS AT LAW

Richard L. Goldfarb

Experience

Rick Goldfarb practices primarily in the commercial, banking, corporate, and securities law areas. He is experienced in complex commercial transactions, including foreign and domestic sales; secured transactions for banks, other financial institutions and borrowers; and in essentially all aspects of the Uniform Commercial Code. Rick also serves as a general corporate counselor.

Rick served as law clerk to Justice Reuben Goodman, Massachusetts Appeals Court (1980-1981).

Professional Honors and Activities

- Named 2009 Seattle Banking Lawyer of the Year by *Best Lawyers*
- Member, American Bar Association (Alaska Native Law Section)
- Member, Washington State Bar Association (UCC Committee; Business Law Section)
- Member, Alaska Bar Association (Alaska Native Law Section)
- Chairman emeritus, Lawyer Referral and Information Services Committee of the King County Bar Association
- Former member, Neighborhood Legal Information and Referral Clinic Committee, King County Bar Association
- Former member, Lawyer Referral Service of the Washington State Bar Association, King County Bar Association
- Former member, Volunteer Lawyers Services Committee, King County Bar Association
- Former member, Delivery of Legal Services Committee, King County Bar Association

Publications

- UCC Revised Article 9 Deskbook, (co-editor and co-author) Washington State Bar Association, 2003
- "Why We Love the UCC," (co-author) Washington State Bar Association, 1998
- "Article 2A-Leases," *Montana Commercial Law Handbook*, 1996
- "Article 2A-Leases," *Washington Commercial Law Deskbook* (Second Edition), 1995
- "The New UCC Articles," (co-author) Washington State Bar Association, 1995

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Education

- Harvard Law School, J.D., 1980, *cum laude*
- Harvard College, A.B., 1977, *magna cum laude*
  Member, Harvard Legal Aid Bureau

Admissions

- Washington
- Alaska

Richard L. Goldfarb

- "Developments in Leveraged Buyouts," Northwest Securities Institute, 1990
- "Basic Commercial Forms," King County Bar Association, 1990
- "Acquisitions Out of Bankruptcy," Washington State Bar Association, 1985

Civic Activities

- Former Vice President--Legal, Boys and Girls Clubs of King County
- Member, Seattle Public Library City Librarian Search Committee
- President, Friends of the Seattle Public Library, 1994-1996
- Member, Harvard-Radcliffe Club of Western Washington
- Member, American Civil Liberties Union

Stephen C. Hall

Experience

Stephen Hall is a member of the firm and past chair of the firm's Renewable Energy Initiative. He has acted as counsel to renewable energy developers (solar, geothermal, wind and biomass), independent power producers, major utilities, investment banks, power marketers, large industrial users of electricity, and developers of green buildings in a variety of business transactions, litigation and regulatory proceedings. His renewable energy practice includes drafting and negotiation of power purchase agreements ("PPAs"), including solar PPAs, and advising sellers and buyers of environmental attributes, including green tags, renewable energy certificates ("RECs"), verified emission reductions ("VERs") and carbon offsets.

Professional Honors and Activities

- Executive Committee, Oregon State Bar Telecom and Utility Section
- Member, American Bar Association Public Utility Section
- Member, Energy Bar Association
- Member, Multnomah Bar Association

Presentations

- Speaker, energy industry conferences on legal issues related to sustainability, climate policy and greenhouse gas legislation, carbon cap and trade, and the development and financing of renewable energy resources.

Civic Activities

- Volunteer, Multnomah County Legal Aid Clinic
- ASPIRE Volunteer Advisor
- Board of Directors of the Autism Society of Oregon

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Education

- University of Notre Dame Law School, J.D., 1996, *cum laude*
  Book Review Editor, *University of Notre Dame Law Review*, 1995-1996
- Western Michigan University, B.B.A. accounting, 1992, *cum laude*

Admissions

- Oregon

John J. Halle

Experience

John Halle is a corporate transactions lawyer with more than 30 years' experience in public and private financing transactions, mergers and acquisitions and corporate governance matters. He advises both companies and financial institutions over a broad range of industries, including technology, energy, retail and manufacturing.

Representative Work

- Has advised as issuer's or underwriters' counsel on more than 100 public equity offerings;
- Advises an electrical utility on secured debt financing and other matters;
- Advises companies and investors with respect to start-up, venture capital, other private equity funding;
- Represents buyers and sellers in public and private company merger and acquisition transactions ranging in size from less than $1,000,000 to hundreds of millions;
- Represents domestic companies with respect to international expansion and foreign companies with respect to domestic investment;
- Advises both public and private companies on corporate governance matters;
- Acts as principal outside counsel to public and private companies.

Professional Honors and Activities

- Listed in *Best Lawyers in America* (2009)
- Judge, International Moot Court Regional and International Rounds
- Mentor, law student mentoring program

Presentations

- Frequent presenter, topics within his area of professional expertise

Publications

- Coauthor, Going Public (Fifth Edition, 1997)
- Author, Foreign Issuers Going Public in the United States (First Edition, 1995)
- Coauthor, "Integration of Securities Offerings: Report of the Task Force on Integration," 41 Bus Law 595 (1986)
- Coauthor, "Public Financing," 1 Advising Oregon Businesses § 16 (Oregon CLE 1984 rev)

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Education

- Suffolk University Law School, J.D., 1978, *cum laude*
  Articles editor, Suffolk Transnational Law Review
- Tufts University, M.A., 1974
  University of Oregon, B.A., 1969, with honors
- International School, Geneva, Switzerland; Le Rosey, Rolle, Switzerland

Admissions

- State bars of Oregon, Washington
- U.S. District Court, Oregon

Languages

- French

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John J. Halle

Civic Activities

- Committee member, Trade Association;
- Committee Member, School Board.

Seth D. Hilton

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Education

- University of California, Davis, School of Law, J.D., 1995
  Order of the Coif
  Senior Articles Editor, U.C. Davis Law Review
  Articles Editor, U.C. Davis Journal of International Law
- Harvard College, B.A., 1992, cum laude

Admissions

- California
- Ninth Circuit Court of Appeals
- Northern, Central, Southern and Eastern Districts of California

Experience

Seth Hilton is a principal in the Energy and Telecommunications Practice Group. He focuses his practice on energy regulation and litigation and represents clients in state and federal court and before a variety of regulatory agencies in California, including the California Public Utilities Commission and California Energy Commission. Seth also regularly advises clients on the development of greenhouse gas regulation in California and under the Western Climate Initiative, and is a frequent writer and speaker on the topic.

Seth also has significant experience in a wide variety of complex commercial litigation. That experience includes trying both jury and bench cases and handling appellate matters, including successfully arguing before the Ninth Circuit Court of Appeals. Seth also has extensive experience in handling both arbitration and mediation.

Following law school, Seth served as law clerk to the Honorable David V. Kenyon, United States District Court for the Central District of California. In 2003, Seth was also appointed to serve on the California State Bar's Standing Committee on Federal Courts. Prior to joining the firm, Seth was an associate with Morrison & Foerster in the firm's Walnut creek office.

Representative Work

Energy Litigation

- Represented wind generation operator and developer in litigation with windpark owner over operations and maintenance contracts, obtaining jury verdict in client's favor after month-long trial in Orange County Superior Court.
- Represented biofuels company in dispute with former partner company, obtaining dismissal of partner company's complaint in Federal District Court, Central District of California.
- Represented a wholesale electricity generator in a dispute with the California Independent System Operator concerning interpretations of the ISO tariff and summer reliability agreements.
- Represented both energy service providers and customers in disputes concerning direct access service contracts, including successful defense of $69 million breach of contract claim filed against an energy service provider.
- Represented wholesale power providers in an interpleader action brought by the Colorado River Commission of Nevada concerning alleged breaches of retail power contracts by its retail customers.

Seth D. Hilton

Commercial Litigation

- Represented technology company in appeal from dismissal of securities class action in the Northern District of California, successfully arguing before a Ninth Circuit appellate panel that the dismissal should be affirmed.
- Represented franchisor in dispute with franchisee over breach of franchise agreement, obtaining favorable arbitration award at conclusion of binding arbitration.

Regulatory Matters

California Public Utilities Commission

- Advised pipeline utility on sale of regulated assets, and obtained approval for sale from California Public Utilities Commission.
- Represented municipal water utility before the California Public Utilities Commission in service territory dispute with neighboring utility.
- Advised several solar energy service providers concerning California regulatory matters and ongoing Commission proceedings.
- Represented wholesale electricity generators in Commission's rulemaking concerning enforcement of generator operation and maintenance standards adopted pursuant to Public Utilities Code § 761.3.
- Obtained exemptions from Pacific Gas and Electric Company surcharges for direct access customer.

California Energy Commission

- Represented independent power producer in petition to modify California Energy Commission license to construct natural gas-fired power plant in southern California.
- Advised independent power producer concerning efforts to develop natural gas-fired generation in northern California.

Greenhouse Gas Regulation

- Currently advise municipal utility concerning implementation of California Global Warming Solutions Act of 2006 by the California Air Resources Board, California Energy Commission and California Public Utilities Commission.
- Advised municipal utilities concerning implementation of California's Emissions Performance Standard for greenhouse gas emissions from electric generation.

Other Regulatory Matters

- Advised municipal utility concerning transmission issues and service territory expansion.
- Advised electric generation developer concerning the California Independent System Operator's Generator Interconnection Process Reform.

Professional Honors and Activities

- Appointed to the California State Bar's Standing Committee on Federal Courts (2003)
- Member, American Bar Association

Seth D. Hilton

- Member, Bar Association of San Francisco
- Member, Conference of California Public Utility Counsel
- Member, Power Association of Northern California

Presentations

- Chair, "Climate Control Regimes in California and the West: Opportunities in Allowance and Offset Markets," San Francisco, CA (September 2008)
- Speaker, "Structuring Global Warming and Green Business Practice Groups," Bar Association of San Francisco (April 2008)
- Chair and speaker, "Opportunities Under the West's New Climate Change and Renewables Rules," symposium, Clean Power in the West Summit (November 2007)
- Speaker, "Global Warming Initiatives in the Western States: Impacts on the Electric Energy Industry and Green Building Industry," Infocast Webinar (October 2007)
- Speaker, California Global Warming Solutions Act of 2006 and the Electric Energy Industry," Western Power Supply Forum II (December 2006)
- Speaker, "California Global Warming Solutions Act of 2006 and the Electric Energy Industry," Infocast Webinar (September 2006)

Publications

- Co-author, "When Bad Projects Happen to Good People," The *Law of Biofuels* (2nd ed. 2008)
- Co-author, "Wind Litigation," *The Law of the Wind* (4th ed. 2008)
- Co-author, "Regulatory & Transmission Related Issues," Lex Helius, *The Law of the Sun* (1st ed. 2008)
- "The California Global Warming Solutions Act of 2006," *Environmental Liability Reporter* (November 2006)
- "The Impact of California's Global Warming Legislation on the Electric Utility Industry," *The Electricity Journal*, Vol. 19, Issue 9 (November 2006)
- "CPUC Adopts Backstop Cost Recovery Rules for Transmission Necessary to Meet California's RPS Goals," *EnergyPulse* (July 2006)
- "DC Circuit Court of Appeals Holds District Court Has Initial Jurisdiction Over PURPA Dispute," *EnergyPulse* (July 2005)
- "Ninth Circuit Declines Review of BPA Decision to Trigger Rate Adjustment Clause," *EnergyPulse* (July 2005)

Jason A. Johns

Associate
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jajohns@stoel.com

Experience

Jason Johns is an associate in the Energy & Telecommunications group. He focuses his practice on federal energy regulation, reliability issues, transmission, and power purchase agreements. Jason is also registered to practice before the U.S. Patent and Trademark Office and has assisted in authoring patents for various chemical processes.

Previously, Jason was an energy regulations consultant, Stoel Rives LLP, Portland, Oregon, 2007; research assistant, Andrew King-Ries, professor of criminal law, 2006-2007; legal intern, University of Montana Legal Counsel, 2006; and judicial extern, U.S. District Court for the District of Montana, 2005.

Before entering law school, Jason worked as a chemist in the pharmaceutical industry, where he focused on synthetic techniques and product development. In his work as a chemist, Jason was able to play an important role in a non-profit effort to develop a method of purifying a vaccine used to treat leishmaniasis—a disease that mostly affects developing countries.

Representative Work

- Routinely drafts transmission analyses that are incorporated into power purchase agreements for an international wind developer.
- Assisted a client in avoiding penalties before the Federal Energy Regulatory Commission's Office of Enforcement.
- Performed a comprehensive internal audit of a cogeneration facility with respect to NERC and WECC reliability standards and helped institute improved employee training and compliance programs.
- Assisted a consortium of wind developers in confronting wind integration charges before the Bonneville Power Administration.
- Filed market-based rate authority, Qualifying Facility, section 203, and transmission rate schedule applications with the Federal Energy Regulatory Commission on behalf of wind, geothermal, solar and hydropower developers and operators.
- Represented a party in the California ISO interconnection queue reform docket at the Federal Energy Regulatory Commission, and has provided counsel to parties involved in the Midwest ISO interconnection queue reform.

Professional Honors and Activities

- Member, Oregon State Bar Association
- Nathan Burkan Memorial Award

Education

- University of Montana School of Law, J.D., 2007, with honors
  Technical Editor, *Montana Law Review*, 2006-2007
- University of California, B.S., 2002, chemistry

Admissions

- Oregon
- U.S. Patent and Trademark Office

Jason A. Johns

Presentations

- Client presentation to international wind developer on *TXU Portfolio Management v. FPL Energy Pecos Wind I* litigation
- Client presentation to hydropower facility developer and operator on Federal Power Act requirements

Publications

- Author, "*A Forgotten Copyright*," American Society of Composers, Authors and Publishers, 2006
- Biannual Energy Regulations update for the American Bar Association Energy Bar
- Regulatory Chapter, Law of Wind; Regulatory and Transmissions-Related Issues Chapter, Law of Wind and Law of Solar Power. Published by Stoel Rives

Civic Activities

- Jason stays active by participating in events hosted by Renewable Northwest Project, National Regulatory Research Institute, and National Wind Coordinating Collaborative. Jason also coaches youth baseball during the summer.

STOEL RIVES LLP
ATTORNEYS AT LAW

Stephen P. Kelly

Of Counsel
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Experience

Stephen Kelly is of counsel practicing in the firm's Construction and Design group.

Professional Honors and Activities

- Member, Executive Committee, Environmental and Natural Resources Law Section, Oregon State Bar

Presentations

- *Tribal Natural Resource Trustees Under CERCLA*, coauthor, Natural Resources & Environmental Law on the Reservation, Tempe, Arizona, 2004
- *Agreements with Tribes—An Introduction*, Oregon State Bar CLE, Portland, Oregon, 2003
- Panelist, "The Portland Harbor Vision," Northwest Environmental Conference, Portland, Oregon, 2003
- *The National Historic Preservation Act*, Oregon Attorney General's Office CLE, Salem, Oregon, 2002
- *The Role of Tribes Under the National Historic Preservation Act: A Case Study*, Natural Resources & Environmental Law on the Reservation, Scottsdale, Arizona, 2002
- "Government-to-Government Agreements with Tribes," Oregon State Bar CLE, Portland, Oregon, 2001
- *Due Diligence in Real Estate Transactions: A Case Study*, Natural Resources & Environmental Law on the Reservation, Scottsdale, Arizona, 2001
- *Comanagement of U.S. Forest Service Lands by the Grand Ronde Tribe*, Oregon State Bar, Portland, Oregon, 2000
- *National Historic Preservation Act: Tribal Participation in Off-Reservation Federal Decision Making*, Environmental Law on the Reservation, Scottsdale, Arizona, 2000
- *Case Note: Kiowa Tribe of Oklahoma v. Manufacturing Technologies*, The Arrow's Edge, Indian Law Section, Oregon State Bar, 1998
- *Potshards and Sun Calendars: BLM Management of Cultural Resources on the Colorado Plateau*, 18 Public Land & Resources Law Review, 1997

Education

- University of Colorado School of Law, J.D., 1993
- Wesleyan University, B.A., 1988, honors in history

Admissions

- Oregon
- Colorado

Adam C. Kobos

Experience

Adam Kobos is an associate in the Tax Section of the firm's Business Services Group. His practice encompasses a wide variety of federal and state tax issues, including:

- Taxable and tax-free corporate mergers and acquisitions;
- Transactions involving partnerships, S corporations, limited liability companies and other pass-through entities;
- Tax aspects of compensation arrangements, including stock options, restricted stock, and bonus plans;
- Debt and equity offerings and other financial transactions;
- Tax controversy matters; and
- State and local tax aspects of transactions.

Adam regularly represents clients who develop or invest in renewable energy projects, including wind, solar, biomass, hydroelectric, and other renewable energy generation facilities and biofuel production facilities. His renewable energy practice focuses on federal, state, and local tax incentives and transaction structures that enable both developers and investors to maximize the value of those incentives.

Representative Work

Federal

- Advised ethanol producer concerning the federal income tax aspects of its combination with public company.
- Advised controlling owner of a large beef processing company concerning the federal income tax aspects of the sale of ownership interests to a foreign public company.
- Advised public company concerning the federal income tax aspects of the issuance of convertible notes and the undertaking of related call spread transactions.
- Advised outdoor apparel and accessories manufacturer concerning the federal income tax aspects of the sale of its business.

Renewable Energy

- Advised developers regarding tax aspects of development, operation, and sale of Washington and Nebraska wind energy projects.

Associate
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Education

- Stanford Law School, J.D., 2002
  Order of the Coif
- Harvard University, A.M., 1998, philosophy
- Amherst College, A.B., 1995, *summa cum laude*, philosophy and history
  Phi Beta Kappa

Admissions

- Oregon
- California
- U.S. Tax Court

Adam C. Kobos

- Advised developers regarding tax incentives and issues relating to partnership flip and leasing structures for Oregon, California, and Colorado solar projects.
- Advised paper manufacturer regarding alternative fuel mixture credits.
- Advised developer regarding Washington tax issues relating to hydroelectric project.

State and Local

- Represented several wind developers obtaining property tax incentives under the Oregon Strategic Investment Program.
- Advised asset manager concerning the Washington transfer tax aspects of its acquisition of multi-billion dollar timber company and subsequent restructuring transactions.
- Represented natural gas exploration company in connection with favorable ruling from the Washington Department of Revenue concerning sales tax aspects of natural gas drilling activities.

Professional Honors and Activities

- Member, American Bar Association, Tax Section
- Member, Oregon State Bar Association, Tax Section

Publications

- "Proposed Regulations Extend 'Share-by-Share Approach' to Basis Recovery in Distributions," *Journal of Corporate Taxation*, May/June 2009
- "Final Regs. Simplify Continuity-of-Interest Rule for Insolvent Corporations," Journal of Corporate Taxation, Mar./Apr. 2009
- "Renewable Energy Aspects of the American Recovery and Reinvestment Act," *Biofuels International*, Mar. 26, 2009 (coauthor)
- "Rev. Rul. 2008-25 Refines (and Revises) the Law of Two-Step Acquisitions," *Journal of Corporate Taxation*, Sep./Oct. 2008
- "Federal Tax Incentives for Green Buildings," *Sustainable Land Development Today*, July/Aug. 2008 (coauthor)
- "Final Regulations Concerning Allocations of Boot and Basis in Reorganizations and Section 355 Distributions," *Journal of Corporate Taxation*, May/June 2008

Civic Activities

- Member of Oregon Episcopal School Alumni Council

STOEL RIVES LLP
ATTORNEYS AT LAW

Charles S. Lewis, III

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Experience

Carl Lewis is a member of the firm practicing in the Seattle office. Carl's practice focuses primarily on federal income tax, particularly with respect to planning and implementing sophisticated tax-motivated transactions, partnerships and joint ventures, financial instruments, and mergers and acquisitions. Carl has represented owners, developers, operators, buyers and sellers for over 25 years in tax-critical transactions ranging from partnerships, joint ventures and LLCs with skewed tax allocations, to leveraged leases, to multi-billion dollar mergers. These projects have included cogeneration projects, biomass generators, coal and gas-fired plants, synthetic fuel projects, wind plants and biofuels projects, and have been located throughout the United States and in Europe, Australia, The Philippines and South America. Recently, Carl assisted a client in creating, designing and implementing a sale and leaseback structure to monetize the remainder of nearly $12 million in Oregon pollution control tax credits. Subsequently, Carl helped the company use this structure again—with the addition of a complex lessee partnership, O&M agreement and operating agreement to bring in an additional tax credit investor when the original investor's tax appetite was insufficient—to monetize an additional $17 million in tax credits with respect to another facility.

Carl joined Stoel Rives in 1978 and is Lead Financial Partner and Tax Matters Partner for the firm.

Professional Honors and Activities

- Included in Best Lawyers in America, 2004-2009
- Selected as one of "America's Leading Lawyers for Business" (Washington) by *Chambers USA* (Corporate/Commercial: Tax), 2006-2009
- Member, Washington State Bar Association taxation section
- Member, Oregon State Bar Association taxation section
- Member, American Bar Association taxation section

Presentations

- Frequently lectures on taxation subjects.

Publications

- "Like Kind Exchange of Property Used in a Trade or Business or for Investment," 5 *Rev of Tax'n of Individuals* 195, 1981

Education

- Willamette University College of Law, J.D., magna cum laude, 1978
  CJS Award (1976, 1977, 1978)
- Lewis and Clark College, B.S., 1975, *magna cum laude*
  Delta Mu Delta, business honorary, OSCPA Accounting Student of the Year, 1975
- University of Southern California, 1971-1972

Admissions

- Washington
- Oregon
- U.S. Tax Court Bar

Charles S. Lewis, III

- "Partnership Taxation," 1 *Advising Oregon Businesses*, Chapter 4, Oregon CLE 1984 and 1989, coauthor 1994 and 1997
- "The 2003 Confidential Transaction Tax Shelter Regulations: Another Chapter in the Disclosure and List Maintenance Regulations Saga," coauthor, *Corporate Taxation*, 2004
- *The Tax Reform Act of 1986: Analysis and Commentary*, coauthor, 1987

Civic Activities

- Member, Board of Directors, Seattle Chamber Music Society

STOEL RIVES LLP
ATTORNEYS AT LAW

Christian M. Lucky

Experience

Christian Lucky concentrates his practice in the areas of renewable energy, corporation finance (debt and equity, including project finance and distressed finance), mergers and acquisitions (public and private companies, including distressed mergers and acquisitions), securities regulation, outbound trade regulation, and white collar crime, including Foreign Corrupt Practices Act compliance. Christian has substantial experience in project finance and project build-out in the renewable energy, precious metals and commercial real estate industries, among other sectors. Christian also has substantial experience representing U.S., Canadian and European clients. He also specializes in banking regulation and oversight of financial institutions.

Christian is the co-chair of the firm's Project Finance and Debt Subgroup.

Partner, Davies Ward Phillips & Vineberg LLP, New York City, 2000-2004; Executive Director, Constitutional and Legislative Policy Institute, Soros Foundations, 1995-1998; assistant professor, Legal Studies, Central European University, 1994-1996.

Representative Work

Bank Financing and Liquidity Operations

- Representation of sovereign-backed lender in the creation of $15 billion in loan facilities to financial services and thrift borrowers including complex securitization and collateral structure with the issuance of multiple classes of debt securities and debentures.

Project Financing

- Representation of European national utility in structuring of global joint venture in renewable energy and clean technology sector and preparation of financing of multiple projects.
- Representation of precious metals producer in the $250 million structured trade/project financing of its gold mine project in Argentina.
- Representation of clean technology issuer in multiple offerings of debt securities under compound exemptions in the United States and Europe (France, Germany, Netherlands and United Kingdom) in connection with microfinance of clean technology and renewable energy projects in developing countries in South America, Central America and Asia; preparation of prospectus and bond documentation for initial $50 million offering.

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Education

- University of Chicago Law School, J.D., 1994
  Managing editor, *European Constitutional Review* (faculty publication)
- Fulbright Fellowship, Berlin, Germany, 1989-1990
- Pacific Lutheran University, B.A., 1989

Admissions

- Washington
- New York

Languages

- French
- German

Christian M. Lucky

- Representation of project owner in $90 million project financing for the development of a 55-story office tower in Mexico City.
- Representation of project owner and developer in multiple project financings (equity and secured debt) of renewable energy projects in the United States ($300 million), preparation of secured lending facilities, project financing documentation, prospectus and joint venture agreements.

Distressed Financing

- Representation of mining company in a reorganization of a complex capital structure, including the issuance of three classes of shares, four classes of debt securities instruments and multiple classes of derivative securities (rights, options and warrants) exercisable for the foregoing. The issuance of the new capital structure was made pursuant to sections 3(a)(9), 3(a)(10), 4(2) and 144A and to regulation S.
- Representation of Asian conglomerate in creation of U.S. joint venture with $100 million partner in distressed industry including asset acquisition, complex financing structure and structuring of joint venture with following multiple project financings.
- Representation of public company in the final disposition of assets, de-listing, termination of SEC registration and liquidation of assets.
- Representation of stalking horse in acquisition of assets of textile manufacturer in section 363 auction.

Mergers and Acquisitions

- Representation of Asian conglomerate in creation of U.S. joint venture with $100 million partner in distressed industry including asset acquisition, complex financing structure and structuring of joint venture with following multiple project financings.
- Consultations to target's board of directors in connection with cross-border takeover by South American public company aquirerors (approximately $1 billion).
- Consultations to public issuer's board of directors in connection with alternative acquisition strategies of U.S. corporation with global operations.
- Acquisition of over 200 convenience stores from petroleum company ($1.06 billion) and financing of the acquisition by the private placement of $223.6 million of subscription receipts, $350 million of senior subordinated notes and $620 million senior of credit facilities.

Securities Regulation/Public Equity Corporation Finance

- Representation of issuer in initial underwritten public offering on NASDAQ.
- Representation of underwriter in multiple follow-on public offerings of NASDAQ-listed companies.
- Preparation of annual reports and proxy statements for publicly listed companies (NYSE and NASDAQ) including executive compensation and Sarbanes-Oxley disclosures.Trade Compliance (Outbound) and Foreign Corrupt Practices Act
- Recurrent advising of several Fortune 500 clients with global operations on outbound trade compliance including compliance with the Foreign Corrupt Practices Act, European Convention on Combating Bribery of Foreign Public Officials, Bank Secrecy Act, USA PATRIOT Act, Office of Foreign Asset Controls Regulations and Department of Commerce Regulations.

STOEL RIVES LLP
ATTORNEYS AT LAW

Christian M. Lucky

Professional Honors and Activities

- *Bar Committee Memberships*. Served on several bar committees including the Partnership and LLC Law Committee, Washington State Bar Association Business Law Section (current) and the Committee on International Law of the New York State Bar Association.
- *Industry Affiliations*. Member, American Solar Energy Society, European Forum for Renewable Energy Resources, French-American Chamber of Commerce.
- *Fellowships and Research Affiliations*. Center for Study of Constitutionalism in Eastern Europe (University of Chicago), Council for Soviet and Post-Soviet Studies, Ford Foundation Research Fellowship, Fulbright Fellowship, Large Scale Emergency Response Program (NYU), Center for Law and Security (NYU), Center for Law and Development (NYU).
- Public Policy Work. Recurrent consultations and advice to the Department of Homeland Security, the New York City Office of Emergency Management and the National Library of Medicine of the National Institutes of Health. Substantially participated in legal policy initiatives for several organizations including the Open Society Institute, the Moscow Branch of the Russian Science Foundation, the Ford Foundation, the University of Chicago Law School, Bellevue Hospital (New York City), New York University School of Law and New York University School of Medicine. Provided consultations and advice to ministries of European governments as well as various offices and programs of the United Nations.

Presentations

- "Tilting at Windmills? Enforcement Trends Revealed by The Siemens Action," Portland General Counsel Roundtable, Apr. 2009
- "Business Opportunities in Troubled Times: The Price is Right or Jeopardy?" Seattle Workout Group, Feb. 2009
- "Distressed M&A for Strategic Acquirers," Distressed M&A Roundtable, Jan. 2009
- "Going Global: Essential International Law for Business Transactions," National Business Institute, Nov. 2008
- "All Fall Down: ABS's, CDO's, Credit Default Swaps and the Collapse of Financial Institutions," Oct. 2008
- "The Policy Implications and Historical Context of the Bear Stearns Bailout," Seattle Tax Group, Rainier Club, Seattle, May 2008
- "Return of the Foreign Corrupt Practices Act," Northwest China Council, Portland, Apr. 2008
- "Legal Obstacles to Disaster Preparedness," Large Scale Emergency Response Project, New York University, New York, New York, Mar. 2008
- "Successor Liability Under the FCPA and OFAC," CLE Seminar, Seattle, Mar. 2008
- Regularly provides training and consultation presentations to the in-house law departments of large corporations.

Publications

- "Siemens FCPA Enforcement Action Suggests Scrutiny of Renewables Industry," Stoel Rives Client Alert, Jan. 2009
- "Sins of Another: Vicarious and Successor Liability under the Foreign Corrupt Practices Act," *Terralex Review*, July 2008
- "Corruption and Transition," *Unveiling Corruption*, Central European University Press (I. Krastev ed. 2008)

Christian M. Lucky

- "Voluntary Care of Children During Disasters," *Journal of Pediatric Emergency Care*, June 2008 (subject of panel presentation at Harvard School of Public Health, Nov. 2008
- "Public Health in Planning and Implementing Large-Scale Evacuations," *Journal of Emergency Planning*, Apr. 2008
- *Legal Remedies for the Resource Curse* (Open Society Press)
- Co-author, *Cairo Report: Human Rights in the Middle East and North Africa,* Open Society Press, 2007
- *Legal Remedies for the Research Curse*, Open Society Press, 2007
- Editor, *Access to Justice in Transition Societies*, Columbia University School of Law (pending)
- Christian was an editor of *East European Constitutional Review* from 1992 to 2000. His articles are recurrently cited in the decisions of constitutional courts of post-Communist countries.

Civic Activities

- Special Counsel, Bellevue Medical Center and New York University School of Medicine, New York City
- Policy Analyst, Combating Corruption in Natural Resource Extraction, a project of the Open Society Institute Justice Initiative

STOEL RIVES LLP
ATTORNEYS AT LAW

Morten A. Lund

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Education

- Yale University, J.D., 1995
- Augustana College, A.B., 1992

Admissions

- Wisconsin
- California bar application pending

Languages

- Norwegian

Experience

Morten Lund is a member of the firm practicing in the Energy and Telecommunications group. His experience includes a broad variety of energy transactions, with particular focus on the development and financing of renewable energy projects, including wind energy and solar energy projects.Morten's project finance background covers the spectrum of transactions involving wind and solar projects (both CSP and PV), including development, finance, acquisition and divestiture. He also has extensive experience with the construction, acquisition and/or financing of combustion generator projects, hydroelectric facilities, cogeneration facilities, nuclear energy facilities, biofuel projects and other energy projects. Morten has particularly strong experience in project finance construction documentation and complex power purchase arrangements. He has also been involved in a number of complex international financing transactions in both energy industry and other sectors.

Morten was born in Oslo, Norway, and is a native speaker of Norwegian. He remains involved in Scandinavian transactions, including acquisitions and divestitures for Norwegian clients and representing American clients in joint ventures in Norway.

Representative Work

Solar Projects

- Represented the developer of a large concentrating solar energy facility in Nevada, the largest solar energy facility to be built in almost 20 years. Advised the project developer about to land rights management, power purchase arrangements, construction documentation, vendor agreements, financing and other development matters.
- Represented the developer of a series of 500kW-2MW solar systems in Arizona, California, Colorado, Nevada, New Jersey, Massachusetts and Connecticut. Advised the client about to development and financing documentation.
- Represented more than a dozen solar developers ranging from startup to publicly traded, with specific focus on early-stage structuring (utility and retail), including request for proposal responses, power purchase agreement/lease negotiations and creative pricing structures.

Wind Projects

- 15 years of experience working with windfarm developers in New York, Pennsylvania, Tennessee, North Dakota, Minnesota, Iowa, Wisconsin, Illinois, Kansas, Oklahoma, Texas, Idaho, Nebraska, Montana, New Mexico and California. Notable windfarm projects include Tatanka (ND), Judith Gap (MT), Buffalo Mountain (TN), Western New York Wind (NY), Cabazon (CA) and Goshen (ID).

- Represented a leading global wind turbine manufacturer in its initial market entry into the United States.

Other Renewable Energy Projects

- Represented the lender in the acquisition and repowering of a series of hydro facilities.
- Represented developers of biomass projects in Wisconsin and Minnesota.

Traditional Energy Projects

- Represented the utility owners in the sale of two nuclear power plants, with particular focus on buy-back power purchase agreements.
- Represented the utility offtaker for a combined cycle gas plant project in tolling agreement negotiations.
- Represented an active nonregulated utility affiliate in the bidding, acquisition and financing of a series of energy assets, including two Pennsylvania coal facilities and a portfolio of New England hydro facilities.
- Represented the utility offtaker for a coal plant in Michigan undergoing conversion to burn woodchips.

Presentations

Morten is a frequent presenter on renewable energy matters. Recent examples include:

- "Pricing Strategies and Negotiating Power Purchase Agreements," Geothermal Finance & Investment Summit, Palm Springs, California, Nov. 17, 2008
- "Negotiating Project Documents," Solar Development Tutorial, San Diego, Nov. 7, 2008
- "Impacts of RPS & Other Initiatives on Project Developments in the Midwest," Opportunities in Midwestern Renewable Energy, Minneapolis, Oct. 7, 2008 (Panel discussion)
- "Renewable Energy Financing," What's Fueling the Renewable Energy Industry in Michigan, Troy, Michigan, Apr. 17, 2008

Publications

- "Jagged Rocks of Wisdom – The Memo: Mastering the Legal Memorandum," *Fine Print Press*, May 15, 2009
- "Jagged Rocks of Wisdom: Professional Advice for the New Attorney," *Fine Print Press*, Mar. 15, 2007

Robert T. Manicke

Experience

Robert Manicke practices in the firm's Portland office. He is the firm's lead member for state and local taxation, and his practice also emphasizes employment tax matters. He regularly represents clients in the Oregon Tax Court and before state revenue authorities, the Portland Revenue Bureau and the Internal Revenue Service.

His transactional practice includes state and local tax incentives, state and federal tax rulings, and state and local tax legislative projects. He has extensive experience with energy-related tax incentives, including the Oregon Business Energy Tax Credit, the Strategic Investment Program and the Enterprise Zone Program.

Representative Work

Lead attorney in numerous cases in the Oregon Tax Court involving corporate and personal income tax, as well as property tax. Representative subjects include:

- Consolidated returns
- Public Law No. 86-272 and nexus
- Statutes of limitation
- Business/nonbusiness income and loss
- Property taxation of centrally assessed businesses
- Property tax exemption

Professional Honors and Activities

- Listed in *Best Lawyers in America*, Tax Law, 2007-2009
- Executive Committee, Oregon State Bar Tax Section, chair of legislative and DOR liaison subcommittees
- Member, ABA Tax Section, including State Tax Committee, state tax nexus article group and Employment Tax Committee
- Member, Oregon Business Association Business and Finance Committee

Presentations

- "Oregon Tax Amnesty Program," Oregon State Bar Tax Section, Portland, Sep. 3, 2009
- "Oregon and Washington Update" (copresenter), Oregon Tax Institute, Portland, Jun. 7, 2009 (forthcoming)

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Education

- University of Illinois College of Law, J.D., 1992, *summa cum laude*
  Order of the Coif
  Board of Editors, *University of Illinois Law Review*
- Willamette University, B.A., 1984, *cum laude*

Admissions

- Oregon
- California
- Washington

Languages

- Dutch
- German

Robert T. Manicke

- "Oregon Legislative Update," Oregon State Bar Tax Section, Portland, Apr. 9, 2009
- "Tax Issues in Employment Settlements," Oregon Law Institute, Portland, Jun. 6, 2008
- "Financial Aspects of Green Building: Tax and Other Governmental Incentives for Green Projects," Lorman Seminar, Portland, Mar. 14, 2008
- "Oregon Legislative Developments: What You Need to Know About 2007 Changes," Lorman Seminar, Portland, Mar. 11, 2008
- "Solar Financial Incentives for Business Owners" (copresenter), Northwest Solar Expo, Portland, Sep. 14, 2007
- "Oregon Update," Oregon Tax Institute, Portland, May 18, 2007
- "Oregon Legislative Update," Oregon State Bar Tax Section, Portland, 2007
- Tax Executives International, Portland, Jun. 2006
- American Wind Energy Association, Pittsburgh, Feb. 2006
- Panel presentation on Oregon's repeal of its discriminatory Section 1031 statute, ABA Sales, Exchanges & Basis Committee, San Antonio, Texas, Jan. 25, 2003

Publications

- "Taxation," *Oregon Legislation Highlights*, Oregon State Bar, 2009
- Chapter on Oregon property tax (coauthor), *ABA Property Tax Deskbook*, annually since 1996
- Survey of Oregon and Idaho tax developments (coauthor), Council on State Taxation, semiannually since 1995 for Oregon, since 2006 for Idaho
- "Taxation," *Oregon Legislation Highlights*, Oregon State Bar, 2008
- "Taxation" (coauthor), *Oregon Legislation Highlights*, Oregon State Bar, 2007
- "Property Tax Exemptions in Oregon: Slips and Tips," Oregon *State Bar Taxation Section Newsletter*, Spring 2005
- "Oregon Pollution Control Facility Tax Credits: 2001 Legislative Changes" (coauthor), *Oregon Insider*, Issue 279, Sep. 1, 2001
- "Tax Incentives" (coauthor), *The Law of Building Green: Business and Legal Issues of Sustainable Real Estate Development*, Stoel Rives LLP, 2007
- "Tax Issues" (coauthor), *The Law of Ocean and Tidal Energy: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2007-2008
- "Tax Issues" (coauthor), *The Law of Wind: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2005-2009
- "Tax Issues" (coauthor), *Lava Law: Legal Issues in Geothermal Energy Development*, Stoel Rives LLP, 2005-2008
- "Tax Issues" (coauthor), *The Law of Biofuels: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2005-2008

STOEL RIVES LLP
ATTORNEYS AT LAW

Robert T. Manicke

Civic Activities

- Participated in the 2007 task force that worked with the City of Portland on development of a tax incentive for venture capital firms.
- Board Member, German American School of Portland, since 1999
- Board Member, Portland Symphonic Girlchoir, 2006-2009

Foreign Languages

- Dutch (reading ability)
- German

Jennifer H. Martin

Experience

Jennifer Martin is a member of the firm practicing in the Energy Group and Renewable Energy Initiative. Her practice focuses primarily on representing renewable energy developers in the negotiation of major power purchase agreements on both the "buy" and the "sell" sides. This experience includes work on many major wind power purchase agreements. Jennifer also advises developers in navigating the regulatory timelines and obligations for securing interconnection agreements and transmission agreements, and negotiating interconnection agreements in organized markets such as PJM, the Midwest ISO and SPP, and with individual utilities. Jennifer also represents renewable energy clients on a variety of energy-related regulatory matters before state and federal agencies. She has experience before state public utility commissions in the Western United States and the Federal Energy Regulatory Commission representing both utility and independent power producer interests.

She has represented renewable energy clients in negotiations with a range of counterparties, including Pacific Gas & Electric (PG&E), Bonneville Power Administration (BPA), Sacramento Municipal Utility District (SMUD), Northern States Power (NSP), Salt River Project (SRP) and Northern Indiana Public Service Company (NIPSCO).

Judicial Clerk, Minnesota Supreme Court, 1999-2000; Senior Note and Comment Editor, *Journal of Gender Race and Justice* at University of Iowa College of Law, 1998-1999; summer law clerk, Stoel Rives, 1998; research assistant, Professor David Baldus, University of Iowa College of Law, 1997-1999; clerk, Circuit Court of Cook County, 1993.

Representative Work

Representative Regulatory Work

- Representation of energy clients including wind and solar developers in administrative litigation and rulemaking matters before the Federal Energy Regulatory Commission (FERC), including Section 205 applications and approvals for FERC-jurisdictional sales, QF and exempt wholesale generator issues, market rate authority, Section 203 transfer of jurisdictional assets; investigations into compliance, and other issues.
- Representation of energy efficiency clients on state regulatory and renewable energy credit (REC) issues and drafting customer participation agreement.

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Education

- University of Iowa College of Law, J.D., 1999
- University of Notre Dame, B.A. English and gender studies, 1995
  St. Patrick's College, University of Notre Dame foreign study program, 1992-1993

Admissions

- Oregon
- Utah
- U.S. Court of Appeals for the Ninth Circuit
- U.S. Court of Appeals for the D.C. Circuit
- United States Supreme Court

Jennifer H. Martin

Representative Transactional Work

- Represented wind developer in negotiation of 50 MW long term power purchase agreement, for sale of output and environmental attributes from Minnesota wind facility.
- Represented wind developer in negotiation of 63 MW long term power purchase agreement for sale of output and environmental attributes from Arizona wind facility.
- Represented wind developer in negotiation of 50 MW long term power purchase agreement for sale of output and environmental attributes from Iowa wind facility.
- Represented wind developer in negotiation of 30 MW long term power purchase agreement for sale of output and environmental attributes from Iowa wind facility.
- Represented wind developer in negotiation of 50 MW long term power purchase agreement for sale of output and environmental attributes from Oregon wind facility.
- Represented wind developer in negotiation of 90 MW long term power purchase agreement for sale of output and environmental attributes from Oregon wind facility.
- Represented renewable energy developer in negotiation of back to back power purchase and sales agreements from a 55 MW biomass facility in Washington state.

Professional Honors and Activities

- Member, Energy, Telecom and Utility Law Section, Oregon State Bar
- Member, Public Utility, Communications and Transportation Law Section, American Bar Association
- Member, Energy Bar Association
- Member, Multnomah Bar Association
- Member, Women of Wind Energy

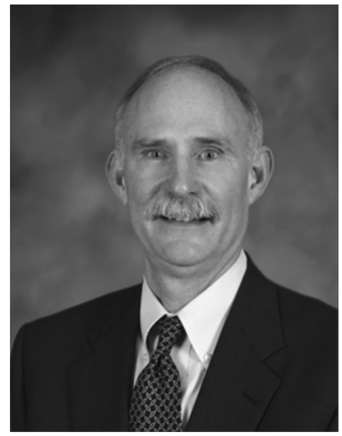
Presentations

- "Law of Renewable Energy: Regulatory and Transmission Issues for Renewable Energy Projects," upcoming Electric Utility Consultants, Inc. Webinar, June 15, 2009
- "Law of Renewable Energy: Power Purchase Agreements for Renewable Energy Projects," upcoming Electric Utility Consultants, Inc. Webinar, May 18, 2009
- Poster Presentation "FERC's Implementation of EPAct of 2005: Impacts on the Wind Energy Business," WINDPOWER 2007 Conference & Exhibition, Los Angeles, California, June 2007

Publications

- "Relocating the Wind: New Strategies for Moving Wind Generation from High-Wind Areas to High-Load Areas," North American Clean Energy, Aug. 4, 2008

Alan R. Merkle



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Education

- Northwestern School of Law of Lewis & Clark College, J.D. 1982, *cum laude*
  Cornelius Honor Society
  Certificate of Environmental and Natural Resources Law, 1982
  Associate editor, *Environmental Law*
- University of Idaho, M.B.A., 1971
- University of Idaho, B.S., 1969, mechanical engineering
- Boise State University, A.S., civil engineering, 1967

Admissions

- Washington
- Oregon

Experience

Alan Merkle is Chair of the firm and a member of its Energy and Telecommunications practice group. He concentrates his practice primarily on energy and infrastructure, with particular focus on project development transactions and related matters.

Alan regularly leads due diligence teams in mergers and acquisitions of renewable energy companies, drafting and negotiating "frame agreement" and project specific turbine supply, power generation equipment, operation and maintenance, and warranty, balance of plant and EPC construction agreements. Representative clients include developers, owners, engineers, architects, contractors, manufacturers and suppliers, together with a large number of leading wind project developers in the United States and Canada, as well as major players in the biofuels, solar, tidal and nuclear power industries.

Alan also handles complex claims, litigation, arbitration, mediation and other alternative dispute resolution matters for a broad range of clients. In addition to his advocacy work, he regularly serves as a neutral on Dispute Review Boards and as a mediator and arbitrator. Prior to practicing law, Alan managed the technical and business sides of major energy, construction, engineering, and manufacturing projects, including 12 years with General Electric Company. He is a registered professional engineer in Washington, Oregon, and Idaho.

Representative Work

Wind

- Represented major Australian energy company in its acquisition and subsequent disposition of a Canadian and U.S. wind development company, as well as turbine supply and project agreements.
- Represented major Canadian energy company in acquisition of wind turbines, operation and maintenance and construction agreements in development of Canada's largest wind project.
- Represented major Canadian energy company in due diligence of large U.S. wind development company with pipeline of several thousand megawatts of projects.
- Represented one of the largest U.S. wind developers in first ever multi-year frame turbine supply agreement with leading U.S. turbine manufacturer.
- Represented one of Europe's largest wind developers in conversion of and renegotiation of worldwide turbine supply agreements for U.S. based, project financeable agreements.

STOEL RIVES LLP
ATTORNEYS AT LAW

Alan R. Merkle

- Represented one of the leading U.S. contractors in negotiating a series of balance of plant agreements for various developers throughout the United States.
- Represented one of the largest U.S. wind developers in negotiating the first ever turbine supply agreement from a major new European entrant to North America.
- Negotiated the first turbine supply agreements with a new North American turbine vendor.
- Represented a significant number of North America's largest wind developers in a full range of project developments for owner/operator and build/transfer projects for several thousand megawatts of wind power.
- Negotiated first of its kind stand-alone tower manufacturing contracts on behalf of project developer purchasing foreign made turbines without towers.
- Lead litigation counsel in a number of significant disputes regarding failed gearboxes, breach of contract, and warranty disputes on behalf of project Owners and developers.

Biofuels

- Represented major international biofuels designer/developer in matters related to development of the largest hydrogen manufacturing facility in North America.
- Represented industry leader in development of combined biodiesel, ethanol, methane, dairy, algae integrated facility.
- Represented major international developer of ethanol projects in unique biomass boiler/ethanol and fuel-dized bed boiler/ethanol production facilities.
- Represented United States largest biodiesel refiner in matters related to the engineering and construction agreements for its production facilities.
- Represented one of U.S. leading developers of algae production for biodiesel and ancillary products in project financing and development agreements.

Solar

- Represented one of the world's leading solar panel manufacturers in development of new manufacturing and production facilities in the United States.
- Represented one of the leading renewable energy developers in the United States in development of a series of solar projects in the western U.S.

Gas Fired Facilities

- Represented two of North America's largest combined cycle project developers in development of a series of large combined cycle projects, including negotiation of turbine and HRSG supply agreements and EPC contracts to design and construct facilities with different contractors and equipment vendors (several thousand megawatts).

Alan R. Merkle

- Represented major utility in designing its RFP process, as well as drafting and negotiating EPC and equipment agreements for 500-megawatt combined cycle plant.
- Represented major international energy company in negotiating EPC contracts for development of 500 megawatt combined cycle facility for third party refinery co-location.
- Represented major developer in negotiation of EPC and project related agreements to develop a combined enhanced oil recovery/combined cycle cogeneration facility.

Geothermal

- Represented geothermal developers in procurement, engineering, construction and related project agreements for new geothermal operations in California and Idaho.

Pump Storage

- Represented major North American developer in due diligence and project agreements for development of two pumped storage/wind integrated projects in North America.

Nuclear

- Represented one of leading developers of small scale modular nuclear power systems in negotiation of its engineering, manufacturing, co-development and project partner agreements.
- Represented major utilities in litigating claims against large scale nuclear power developer.

Professional Honors and Activities

- Listed in *Best Lawyers in America*
- Repeatedly named one of Washington's "Super Lawyers" by *Washington Law & Politics*
- Named one of Seattle's "Top 100 Lawyers" by *Seattle Magazine*
- Honorary AIA and a biographee in *Who's Who in American Law*, *Who's Who in America,* and *Who's Who in the World*
- Past chair, Public Procurement and Private Construction Law Section, Washington State Bar Association
- Past board member and Legal Affairs Committee chair, Associated General Contractors of Washington
- Member, WSBA Litigation Section, Oregon State Bar Association Construction Law and Litigation Sections, American Bar Association Public Contract Law and Litigation Sections, Federal Energy Bar Association
- Board member, Seattle chapter, American Institute of Architects
- Graduate, American Arbitration Association mediator training program

STOEL RIVES LLP
ATTORNEYS AT LAW

Alan R. Merkle

Presentations

- Frequent speaker and writer on subjects of turbine warranties, operating and maintenance agreements, and EPC agreements for wind, biofuels, waste to energy and related industries

Publications

- Author of numerous articles and chapters on subjects of design, construction, equipment procurement, project development and related topics.

Civic Activities

- Former council member and Mayor, City of Mercer Island
- Chair, Washington Department of Transportation Expert Review Panel
- Executive VP, Board member, French American Chamber of Commerce – Pacific Northwest
- Former Board member, Vice Chairman Cascade Water Alliance

STOEL RIVES LLP
ATTORNEYS AT LAW

Michael P. O'Connell

Experience

Michael O'Connell is a member of the firm practicing in the Resources Development and Environment group. He focuses his practice on natural resources, environmental, energy, water rights and Indian law matters involving project development. For more than 30 years, Michael has assisted a broad range of clients throughout the West, including public ports, energy producers (wave and tidal hydrokinetic and conventional hydropower, wind, ethanol, oil and gas developers, pipeline owners), forestry, food processing, shopping center and golf course developers, general contractors, industrial, manufacturing, commercial and other private and public clients, including Indian tribes and parties engaged in business or other transactions with Indian tribes.

Michael counsels clients through federal, state and tribal environmental review, project siting and permitting matters involving National Environmental Policy Act, Endangered Species Act, Clean Water Act (stormwater, wastewater and wetlands permits, citizen suits and water quality certifications), coastal zone management, National Historic Preservation Act compliance regarding cultural resources and historic properties (including traditional cultural properties or TCPs), human remains, fossils, and water right acquisitions and transfers. In these areas, Michael also assists clients in transactional due diligence, regulatory compliance and litigation.

In Indian law matters, Michael assists clients on projects (on and outside Indian reservations) that affect tribal interests, including financial transactions, leases and rights of ways over tribal land, taxation and employment issues, negotiating waivers of tribal sovereign immunity and litigation. He also regularly speaks at seminars on environmental, natural resources and Indian law.

Representative Work

- Represented utility in Washington Supreme Court in successful defense of utility commission action allowing rate recovery of costs of tax imposed by Yakama Indian Nation, *Willman v. WUTC*, 117 P.3d 343, 2005.
- Advise wave energy developer on permitting issues for project on Oregon coast, including Federal Energy Regulatory Commission licensing and historic property consultation issues.
- Advised tidal energy client in New York on permitting issues.
- Counseled client negotiating lease of tribal land, assisted in obtaining federal legislation confirming tribe's authority to lease fee land.
- Counseled client negotiating lease of tribal land for shopping center.

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Education

- University of Denver College of Law, J.D., 1977
  Editor-in-chief, *Denver Law Journal*
  Order of St. Ives
- Brockport State College, B.A., political science, 1969

Admissions

- Washington
- Arizona
- Colorado
- U.S. District Courts of Washington, Arizona and Colorado
- U.S. Court of Appeals for the Ninth Circuit
- U.S. Supreme Court

Michael P. O'Connell

- Advised clients in settlements of Clean Water Act citizen suit notices without filing of threatened federal court suits.
- Assisted client acquiring forestry mill with water rights due diligence and negotiation of escrow to protect client's water supply right.
- Assisted data center owner located in desert area in acquiring water rights necessary to cool servers.
- Assisted land purchaser in resolving dispute with seller over ownership of water rights.
- Negotiated settlement agreement for client with Indian tribes and federal and state agencies for voluntary removal of dam licensed by FERC.
- Resolved historic property and cultural resources issues necessary for Corps of Engineers permits issued to wind and biofuel energy clients.
- Counseled utility clients in negotiation of rights of way with Indian tribes.
- Counseled client developing gas fired, off reservation energy facility in resolving tribal water rights claims.
- Advised general contractor negotiating a construction contract with an Indian tribe for casino and resort complex.
- Obtained dismissal of tribal court employment suit against general contractor.

Professional Honors and Activities

- Listed in *Best Lawyers in America*®, 2007-2010
- Editor, Washington State Bar Association, *Environmental and Land Use Law Newsletter*
- Vice chair, Hydro Committee, 2008 2009, Section on Energy, Environment, Resources, American Bar Association
- Past chair, Indian Law Section, WSBA
- Past chair, Native American Resources Committee, Section on Natural Resources, Energy and Environmental Law, American Bar Association

Presentations

- "Business Activity and Taxation: Issues in Indian Country," 22nd Annual University of Washington Indian Law Symposium, 2009
- "Renewable Energy Development and Indian Tribes," Tax Management for Tribes Conference, 2009
- "Energy Projects on Tribal Land," Energy Resource Development and Litigation in Tribal Lands," American Bar Association Webinar, 2009
- "Geothermal Projects: Cultural Resources and Historic Properties," Geothermal Energy Finance, Technology and Development Workshop, 2009
- "Structuring and Financing Tribal Renewable Energy Projects," Federal Bar Association, 2009
- "Doing Business with Indian Tribes," Stoel Rives LLP Webinar, 2009
- "Energy Project Permitting," Permitting Strategies Conference, 2009

Michael P. O'Connell

- "Private Water Rights Transactions," Water Rights Sales and Transfers, Lorman, 2008
- "The U.S. Army Corps of Engineers 2007 Nationwide Permits and the RGL 07 02 Permit Exemption for Certain Ditches," Clean Water and Stormwater Conference, Law Seminars, 2008
- "Siting Ocean and Tidal Energy Projects," Ocean Use, Development and Permitting, Law Seminars, 2008
- "Home Builders: Back to Sierra Club v. Babbitt," Endangered Special Act, 2008
- "Tax Neutrality Agreements and Business Development on Indian Reservations," Tax Management for Indian Tribes, 2008
- "U.S. Army Corps of Engineers: Nationwide Permits and Compensatory Mitigation," Clean Water and Stormwater Conference, Law Seminars, 2007
- "New Opportunities for Windpower on Tribal Lands," AWEA National Conference, Los Angeles, 2007
- "Basics of Successful Natural Resource Development Projects in Indian Country," Natural Resources Development in Indian Country, Rocky Mountain Mineral Law Foundation, 2005
- "Shopping Center Development and Leases on Indian Reservations," U.S. Shopping Center Law Conference, 2005
- "Easements on Indian Reservations," University of Washington School of Law, 2005
- "Tax Considerations in Natural Resource Development Projects on Indian Lands," Natural Resources Development in Indian Country, Rocky Mountain Mineral law Foundation, 1999

Publications

- "Siting Ocean and Tidal Projects," Bloomberg Law Reports: *Sustainable Energy*, 2008
- Chapter, "Siting and Permitting Ocean and Tidal Energy Project," *The Law of Ocean and Tidal Energy: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2008
- Chapter, "Tribal Energy: Wind Energy Projects on Tribal Land," *The Law of Wind: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2008
- "Significant Recent Federal Environmental Decisions," *Environmental & Land Use Law Newsletter*, Washington State Bar Association, 2008
- "Indian Tribes and Project Development Outside Indian Country," 21 *Natural Resources & Environment* 54, 2007
- "Labor Board Extends Jurisdiction to Indian Tribes," *Indian Law Newsletter*, Washington State Bar, 2004
- "Citizen Suits Against Tribal Governments and Tribal Officials Under Federal Environmental Laws," 36 *Tulsa Law Journal* 335, 2000

Civic Activities

- Board of Directors, L'Arche Noal Sealth of Seattle, 2007 present
- Board of Directors, Ocean Energy Renewable Coalition, 2008 present

Karl F. Oles

Experience

Karl Oles is a member of the firm practicing in the Construction and Design section of the Litigation practice group. He has represented owners, architects, engineers, contractors and subcontractors in complex construction litigation and has experience in other complex business disputes. He has experience in trial, arbitration and mediation. Karl has also drafted and negotiated multi-million dollar design and construction contracts on a wide variety of projects, including alternative energy projects.

Professional Honors and Activities

- Included in "*Super Lawyers*," *Washington Law & Politics*, 2003-2007
- Member, Technology committee and steering committee for Division 12 (Owners and Lenders), American Bar Association Forum on the Construction Industry
- Member, arbitrator, American Arbitration Association Construction Panel
- Past Chair, Construction Section, Washington State Bar Association

Presentations

- "Who's Steering the Ship? Construction Administration by Design Professionals and Agency Construction Managers," American Bar Association Forum on the Construction Industry Fall Meeting, Newport, Rhode Island, 2007
- "Construction Contract Formation and Drafting," Lorman Education Services, Comprehensive Construction Law in Washington, Seattle, Washington, 2006
- "Delay Claim Damages Measurement," seminar, Contract Solutions Group, Seattle, Washington, 2006
- "Beating Difficult Contract Clauses," seminar, Washington State Bar Construction Section, Seattle, Washington, 2005
- "Avoiding Claims: Case Studies and Lessons Learned on Recent Public Projects," seminar, Washington State Bar Construction Section, Seattle, Washington, 2003
- "Working with the Construction Expert," seminar, Washington State Bar Construction Section, Seattle, Washington, 2002
- "Parties and Claim Theories in Construction Cases," seminar, Washington State Bar Construction Section, Seattle, Washington, 2002

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Education

- University of Washington School of Law, J.D., 1986
- University of California at Los Angeles, M.A., 1982
- University of London, M.A., 1978
- Pomona College, B.A., 1977, *magna cum laude*

Admissions

- Washington
- U.S. District Court for the Eastern and Western Districts of Washington
- Ninth Circuit Court of Appeals

Karl F. Oles

Publications

- "Design, Engineering, Construction and Turbine Purchase Agreements," coauthor, *The Law of Wind: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2008
- "Solar Energy System Design, Engineering, Construction and Installation Agreements," coauthor, *Lex Helius—The Law of Solar Energy: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2008
- "Ease into '08 with a Crash Course in Subpoenas," *The Daily Journal of Commerce*, Oregon, 2008
- "Setting Up Shop: Design, Engineering and Construction for Biofuels Plants," coauthor, *The Law of Biofuels: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2007
- "Contractors Eyeing Washington Must Heed State Statutes," *The Daily Journal of Commerce*, Oregon, 2007
- "Setting Up Shop: Design, Engineering, Construction and Turbine Purchase Agreements," coauthor, *Lava Law: Legal Issues in Geothermal Energy Development*, Stoel Rives LLP, 2007

Civic Activities

- Board member, ACE Mentors of Washington
- Member, board of trustees, Episcopal Retirement Communities

STOEL RIVES LLP
ATTORNEYS AT LAW

Kevin T. Pearson

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(503) 294-9622 direct
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Experience

Kevin is a member of the firm practicing in the Tax section of the firm's Business Services Group. His practice focuses principally on federal income tax law, including both transactional matters and tax controversy matters. As part of his transactional practice, Kevin regularly advises clients regarding all aspects of corporate taxation, including taxable and tax-free mergers and acquisitions, debt and equity offerings and other corporate finance transactions, consolidated return issues, and general corporate tax issues. He also regularly represents clients with respect to partnership, S corporation and limited liability company transactions and tax issues, as well as choice-of-entity issues, tax accounting issues, and general tax planning issues. In addition, Kevin frequently represents clients in renewable energy financing transactions, particularly those involving the federal production tax credit. As part of his tax controversy practice, Kevin regularly represents taxpayers in IRS audits and administrative appeals, deficiency litigation in the U.S. Tax Court, and refund litigation in U.S. District Courts and the U.S. Court of Federal Claims.

Professional Honors and Activities

- Member, Tax Section, American Bar Association
- Member, Tax and Business Law Sections, Washington State Bar Association
- Member, Tax Section, Oregon State Bar
- Member, Portland Tax Litigation Club, Multnomah Bar Association
- Former board member, Linfield College Alumni Association

Presentations

- Speaker, "New Proposed Anti-Morris Trust Regulations Under IRC § 355(e)," Portland Tax Forum, May 2001
- Speaker, various continuing legal education and other seminars regarding a wide variety of tax issues, including tax considerations in choosing a form of business entity, tax aspects of corporate reorganizations and other corporate transactions, tax considerations in partnership, S corporation and real estate transactions, tax planning for equity compensation, and ethical rules governing tax practitioners.

Publications

- "Renewable Energy Aspects of the American Recovery and Reinvestment Act," coauthor, *Biofuels International*, Mar. 2009

Education

- Georgetown University Law Center, LL.M. Taxation, 1998
- Gonzaga University School of Law, J.D., 1996, *summa cum laude*
  Articles Editor, *Gonzaga Law Review*, 1995-1996
  National Moot Court
- Linfield College, B.S., 1992

Admissions

- Oregon
- Washington
- U.S. Court of Federal Claims
- U.S. Tax Court

STOEL RIVES LLP
ATTORNEYS AT LAW

Kevin T. Pearson

- "Investing in Renewable Energy: Investment by Non-Utilities in Electric Generation Can Have Far-Reaching Tax Benefits," coauthor, in *The Energy and Utilities Project: Innovation for the Future* (vol. 5), 2005
- "Tax Issues," coauthor, in *The Law of Wind*, Stoel Rives LLP, 2005
- "Tax Issues," coauthor, in *Lava Law: Legal Issues in Geothermal Energy Development*, Stoel Rives LLP, 2004
- "The 2003 Confidential Transaction Tax Shelter Regulations: Another Chapter in the Disclosure and List Maintenance Regulations Saga," coauthor, in *Corporate Taxation*, May/Jun. 2004
- "Tax Issues," co-author, in *The Law of Wind: A Guide to Business and Legal Issues*, Stoel Rives LLP, 2003
- "The Sarbanes-Oxley Act of 2002: Important Tax-Related Issues," coauthor, presented to the Tax Executives Institute, Oct. 2002
- "What Every Business Lawyer Needs to Know About Tax," presented to the Oregon State Bar Young Lawyers Division, Oct. 2002
- "Corporate Reorganizations: Basic Concepts, Emerging Issues, and Unique Reorganizations," coauthor, Oregon State Bar Tax Institute, Jun. 2000
- "Equity Compensation: Basic Concepts and Emerging Issues," coauthor, presented to the Tax Executives Institute, Apr. 1999

Jason E. Prince

Experience

Jason Prince's practice emphasizes domestic and international commercial litigation, alternative dispute resolution, and transactional counseling. He represents businesses of various sizes in complex contract disputes in state and federal courts, as well as in negotiations, mediations, and arbitrations. Additionally, he advises exporting businesses on an array of international commercial agreements involving buyers, distributors, and sales representatives in Canada, Asia, Latin America, Europe, and Africa. He also counsels multinational and exporting businesses on compliance with the Foreign Corrupt Practices Act and the Export Administration Regulations.

Representative Work

- Defending two national grocery corporations in the Motor Fuel Temperature Sales Practices Litigation MDL proceeding
- Defended a large multinational software corporation in a breach of contract lawsuit in Idaho federal court involving complex software implementation issues; obtained a settlement through mediation
- Counseling Meyer Industries, winner of the Commercial News USA 2009 Exporter of the Year Award (Agriculture), on legal issues related to distributing its Rodenator® product in the U.K., Australia, New Zealand, Spain, France, South Africa, and Mexico
- Defended a national grocery corporation in a breach of contract lawsuit in Idaho federal court concerning a multi-million dollar professional services agreement; obtained a settlement through mediation
- Counseled an international humanitarian organization on complying with the EAR provisions governing its donations of millions of dollars worth of goods to women and children in North Korea
- Provided FCPA compliance training to executives and employees of a multinational renewable energy company and counseled the company on tailoring its mergers and acquisitions due diligence protocol to address FCPA issues

Prior Domestic and International Experience

- Law clerk to the Honorable Susan H. Black, U.S. Court of Appeals for the Eleventh Circuit, 2005-2006
- Deputy press secretary to the Honorable Nobuteru Ishihara, Member of the Japanese House of Representatives and Minister of State for Administrative and Regulatory Reform, Tokyo, Japan, 2001-2002

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Education

- University of Notre Dame Law School, J.D., 2005, *magna cum laude*
  Editor-in-chief, *Notre Dame Law Review* (2004-05)
  International Law Program, London, England (Summer 2003)
- University of Cambridge, M.Phil., 2000
  Coursework in European Union environmental law
- Davidson College, B.A., 1999, *magna cum laude*
  Phi Beta Kappa

Admissions

- Idaho
- U.S. District Court for the District of Idaho
- U.S. Court of Appeals for the Eleventh Circuit

Languages

- Japanese
- Spanish

STOEL RIVES LLP
ATTORNEYS AT LAW

Jason E. Prince

- Legislative correspondent, U.S. Senator Mike Crapo, 2000-2001

Professional Honors and Activities

- Chair 2009-2011, member (appointed by U.S. Secretary of Commerce), 2008-present, Idaho District Export Council
- Member, Kickstand Board of Trustees, 2008-present
- Member, Idaho State Bar, International section, 2008-present, and Litigation section, 2006-present
- Member, American Bar Association, International and Litigation sections, 2007-present
- Member, Federal Bar Association, Idaho Chapter, 2006-present
- Associate, American Inn of Court No. 130, 2007-2009

Presentations

- "International Distribution Agreements: Ten Traps for the Unwary," World Trade Day Conference, Boise, Idaho, 2008
- "International Commercial Law Issues," Seminar, Boise State University Department of Business, Boise, Idaho, 2008
- "Anti-Corruption in the International Marketplace," CLE Seminar, National Business Institute, Seattle, Washington, November 2008
- "Rise of the Foreign Corrupt Practices Act: How to Minimize the Perils of Doing Business in China," Presentation, Northwest China Council, Portland, Oregon, 2008
- "International Commercial Transactions and the Law," Seminar, U.S. Commercial Service, Boise, Idaho, 2008
- "The Foreign Corrupt Practices Act," CLE Seminar, Micron Technology, Inc., Boise, Idaho, 2007

Publications

- "Does Act of State Mean Out of Luck?: The Perils of Doing Business with Foreign States and Their State-Owned Companies," *The Advocate* (forthcoming 2009)
- Coauthor, "Foreign Corrupt Practices Act," Chapter 16 of *The Law of Wind*, Stoel Rives
- "A Rose By Any Other Name? Foreign Corrupt Practices Act-Inspired Civil Actions," *The Advocate*, Mar/Apr 2009
- "Paying for the Sins of Another: Vicarious and Successor Liability Under the U.S. Foreign Corrupt Practices Act," *Terralex eNewsletter*, July 2008
- "Five Ways Idaho's Exporters Can Minimize Liability," *Idaho Business Review*, June 2008
- "First to File or First to Offend?: Demand Letters and the First-to-File Rule," *The Advocate*, May 2007
- "China, Idaho, Florida? Which Law Governs Your Contract Disputes?", *Idaho Business Review*, March 2007
- "New Wine in Old Wineskins: Analyzing State Direct-Shipment Laws in the Context of Federalism, the Dormant Commerce Clause, and the Twenty-First Amendment," 80 *Notre Dame Law Review* 1563, 2004

Jason E. Prince

Civic Activities

- Chair, Idaho Law Day Committee, 2007-2008, member and volunteer, 2006-present
- Participant, Boise Metro Chamber of Commerce, Leadership Boise, 2007-2009
- Assistant continental liaison for Asia, USA Swimming International Relations Committee, 2004-2008
- Member, USA Swimming Board of Directors, 2000-2006

STOEL RIVES LLP

ATTORNEYS AT LAW

Howard E. Susman

Experience

Howard E. Susman is a member of the firm's renewable energy practice group, and Chair of its Solar Initiative. Now serving developers and operators of wind and solar projects, Howard has represented wind clients in every phase of project development, operation, and transfer since the industry's inception in the early 1980s. With a national reputation as one of the leading lawyers involved in that industry, Howard has represented clients in both transactional and litigation matters. His experience extends to all elements of renewable energy including real estate and environmental matters, equipment performance and project operations, consulting and business relationship matters, insurance coverage, and complex business litigation.

Partner, Duckor Spradling Metzger & Wynne (2001-2005); Hillyer & Irwin (1982-2000), managing partner (1996–1999); attorney, Pacific Legal Foundation (1979-1981).

Representative Work

- Joint venture agreements for development of 45 and 60 Mw California wind energy projects and leases for project sites
- Agreements for construction, sale, and operation of 136Mw Washington wind energy project and associated transmission and interconnection facilities
- Power purchase agreements and site leases for multi-user/multi-tenant distributed generation photovoltaic projects
- Agreements for sale, installation, and licensing of SCADA systems for energy projects

Representative Litigation Matters

- Defense of wind project developers' re-powering permits against challenge on grounds of inadequate analysis of downwind effects in environmental impact report
- Defense of actions for infringement of patents for variable speed wind turbine technology in U.S. International Trade Commission and US District Court
- Representation of wind project owners in actions to enforce warranty and property insurance following wind turbine manufacturers' inability to repair multiple and serial defects

Professional and Community Activities

- Past President and Director, Association of Business Trial Lawyers of San Diego

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Education

- University of California at Santa Barbara, B.A. Environmental Studies, 1975
- University of San Diego, J.D., 1979

Admissions

- California
- U.S. District Courts, California, Colorado
- U.S. Courts of Appeals, 9th Circuit and Federal Circuit

Howard E. Susman

- Member, California and American Wind Energy Associations
- Member, San Diego County Bar Association
- Certified Mediator
- Member, UCSB Crew Alumni Association; Leader, Regional Father/Son Group Program, 2005, Encinitas YMCA

Professional Honors and Activities

- Selected as one of "America's Leading Lawyers for Business" (California) by *Chambers USA* (Energy: Transactional), 2009

Presentations and Publications

- "Wind Advisory (Site Control for Wind Projects)," Los Angeles Lawyer, January, 2008
- Chair, Solar Project Development Tutorial, San Diego, 2007
- "The Role of Key Project Contracts," Renewable Energy Project Finance Seminar, New York, 2007, San Diego, 2006 & 2008
- "Working Effectively and Efficiently With Your Lawyers," Windpower 2005, Denver
- Application of the Anti-SLAPP Statute to Malicious Prosecution, ABTL Reports, 2002
- "Mediating Business Cases", Association of Business Trial Lawyers Annual Seminar, 2000
- "Site Acquisition and Successful Landowner Relationships", Windpower '95, Wash., D.C.
- "Litigation Consulting and Expert Testimony", UCSD Extension, 1992, Institute of Management Consultants, 1997

STOEL RIVES LLP

ATTORNEYS AT LAW

Stoel Rives Supports Renewable Energy

Stoel Rives purchases Renewable Energy Credits known as RECs or “green tags” to offset 100 percent of its firmwide electricity usage. The emissions that are avoided through this green power purchase is roughly equivalent to the annual greenhouse emissions from 1,208 passenger vehicles or 748,617 gallons of gasoline. We purchase our RECs from firm clients 3Degrees and Bonneville Environmental Foundation. With our green power purchase commitment, we are one of the first law firms nationwide to qualify as a member of the U.S. EPA Green Power Partnership’s Leadership Club and the ABA-EPA Law Office Climate Challenge programs.

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LEX HELIUS

The Law of Solar Energy

STOEL RIVES LLP
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Lex Helius will be updated periodically, but to stay informed of developments in the solar energy industry before the next edition, please sign up for our alerts at www.stoel.com/subscribe.
You can also visit our Renewable + Law blog at www.lawofrenewableenergy.com.

Stoel Rives is a leading business law firm with focused experience in the areas of energy and environmental law and nearly 400 attorneys in eight states.

Stoel Rives is proud to purchase Renewable Energy Credits to offset 100 percent of its firmwide electricity usage.

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EPA GREEN POWER PARTNER

Alaska California Colorado Idaho Minnesota Oregon Utah Washington

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