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ENVIRONMENTAL LAW

Fueled by the Sun: 10 Sizzling Legal Issues in Solar Energy Projects

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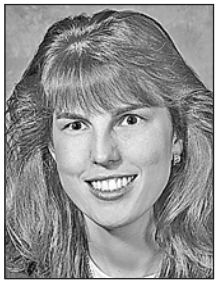
Special to the Legal

From sustainability initiatives designed to reduce carbon emissions, to business strategies designed to control costs and enhance value, to governmental policies designed to create green jobs, there is a growing demand across multiple sectors for clean, renewable energy. This demand, in turn, is fueling the current drive to develop and use power sourced from the sun — i.e., photovoltaic (PV) or solar power. Abundant, environmentally friendly, sustainable, and often priced competitively as compared to more traditional sources of energy, solar power can be a valuable tool to help control rising energy costs and minimize environmental impacts.

Whether a client is looking to generate, purchase or sell solar electricity, however, the process can be quite complex. Legal counsel can best assist clients by understanding the broad array of issues raised in a solar development project and guiding them through issues in a manner designed to maximize their opportunities and avoid potential pitfalls.

One of the first questions that should be asked and answered in connection with a proposed solar project may appear at first pass as decidedly basic: What is the deal? While perhaps simplistic on the surface, resolving this query early on is critical to charting a successful course toward the client's desired solar energy goals.



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Some of the questions that counsel should ask to flesh out the "deal" may include the following: Who will purchase, own, install, operate and maintain the solar system? How will the project be funded? Where will the system be physically located? Who will buy the system's electricity output? Who will own (and gain the value of) the renewable energy credits? Ultimately, it is critically important for the client to understand the typical deal components so that it can make informed choices in the transaction.

Certain fundamental topics will typically need to be addressed in the course of a solar energy project. Ten of these are discussed below and are presented in the order in which they will generally arise. By anticipating these and other issues, lawyers undertaking solar representations can help their clients to efficiently and effectively sort through the deal components and realize their goals with respect to the production and/or use of solar energy.

NO. 1: TRANSACTION STRUCTURE

For the client looking to generate and sell solar energy, immediate, off-the-shelf solutions may not be appropriate or available. The majority of consumer-scale solar arrangements are structured in three typical ways, each of which has its own benefits, costs and complexities: (1) power purchase agreements (PPA), under which an energy consumer purchases the solar power generated by a solar system physically located at such consumer's property, but which solar system is owned, operated and maintained by a third-party; (2) solar system ownership, where an energy consumer purchases, owns and maintains a solar system and uses the generated solar electricity for its power needs; and (3) solar system leasing, a financing alternative to ownership. The decision as to which transaction structure to create depends principally on a client's particular situation and solar energy goals. It likely will also be influenced by the client's access to capital, ability to realize the benefits of available financial and tax incentives, and comfort level with the prospect of operating and maintaining solar equipment.

In addition to these consumer-scale projects, there is a growing market in utility-scale solar projects, which are

usually larger projects that feed their energy directly into the electricity grid operated by a regional transmission organization (RTO). This article will focus primarily on legal issues associated with a consumer-scale project, although many of these issues also present themselves in the utility-scale context.

NO. 2: INCENTIVES

Many financial and tax incentives have been created to foster increased solar development. Likely the largest and most widely used of such incentives are (i) the federal investment tax credit (ITC), which provides qualifying entities with a tax credit equal to 30 percent of the eligible costs of a solar system, and (ii) the grant-in-lieu of ITC, which is an up-front cash grant obtained in place of the ITC by a qualifying solar system purchaser from the U.S. Treasury Department. Both the ITC and grant-in-lieu are subject to a variety of rules and guidelines, and accordingly, counsel typically plays an important role in helping clients understand and obtain these incentives.

In addition, many states offer grants, rebates, and/or attractive loan programs for qualifying solar projects. Assistance is also available through programs such as the Environmental Protection Agency's Re-Powering America's Land initiative, under which the EPA offers financial and technical assistance to those looking to use contaminated sites for renewable energy development. Often, a combination of these incentives may be used to increase the economic returns on a solar project.

NO. 3: FINANCING

Once the client has decided on a deal structure and has determined which, if any, economic incentives can be obtained, it will need to determine how the balance of the solar development project will be paid for and to secure financing as necessary. Purchase money for solar systems is typically a mix of existing and new equity (e.g., cash on hand and new cash raised for the specific project), and debt.

Using existing equity will usually have the lowest transaction costs, but at potentially increased opportunity costs. Both equity and debt financing avoid out-of-pocket spending, but both can have associated transaction costs. Equity investors frequently require some degree of control and lenders often wish to place restrictions on borrowers and their solar projects. There is no one-size-fits-all financing solution, and most projects are completed using a combination of both equity and debt.

Overall, at present, solar energy development and regulatory programs are inseparably linked.

NO. 4: SITING, ZONING AND PERMITTING

Not even the best structured, fully funded solar transaction can come to fruition without a suitable installation site. The most common types of sites are rooftops (roof-mount), open parcels of land (ground-mount) and parking lot canopies designed for solar installations (parking canopy-mount), each of which requires uninhibited, direct exposure to the sun. With a roof-mount system, some key considerations may include the condition of the roof, weight-bearing load limits, impacts on roof warranty, roof pitch, wind conditions and accessibility for maintenance.

With a ground-mount system, key considerations may include environmentally sensitive areas or land use restrictions, such as the presence of wetlands, floodplains, conservation areas, endangered species habitat, contamination, landfill or soil caps, or other engineering or institutional controls. Parking canopy-mount systems present a hybrid of all of the above, since the canopies themselves are ground mounted while the roofs of the canopies are used for the actual solar installations.

In all cases, it is important to ensure that the project can be constructed in compliance with all applicable environmental, land use and zoning requirements, and that all necessary permits to construct and operate the system can be timely obtained. The availability of liability protections from environmental regulatory agencies may also need to be assessed. In addition, it may be necessary to secure leases, easements and other access rights when a solar project is hosted on a third-party's property.

NO. 5: ENGINEERING, PROCUREMENT, CONSTRUCTION

Solar systems are often composed of large quantities of sophisticated electrical equipment, and the smallest installation details (such as precise angles and locations) can mean the difference between well and poorly performing projects. Clients without significant experience in these areas may consider engaging an engineering, procurement and construction (EPC) contractor to provide a turnkey solar system at a predetermined price. EPC contractors can undertake comprehensive responsibility for project development, from initial designs and permitting to final commissioning tests and regulatory approvals. Since large solar systems can easily cost in the tens of millions of dollars, EPC contracts should be drafted and negotiated to clearly set forth both parties' respective obligations and responsibilities.

NO. 6: ENERGY REGULATION

At what point does a private individual or entity generating solar electricity become a regulated utility? The answer may depend on whether such individual or entity

consumes the power it generates, sells such power to third-parties under a PPA, or to the public generally through the grid. These questions can be jurisdiction-specific and it is important for a solar power provider to evaluate and resolve these and other similar regulatory questions up front. Likewise, the process of physically interconnecting a solar system with an energy customer's electrical infrastructure or the grid can be highly regulated and the parties involved must understand the regulatory framework, the RTO interconnection rules, and the requirements of the local public utility.

NO. 7: RENEWABLE ENERGY CREDITS

As solar systems generate electricity, they also have the capacity to generate environmental "credits" that evidence the generation of clean, renewable energy. Currently the most well known and valuable of such environmental credits is the solar renewable energy certificate (SREC), a marketable certificate created through solar generation that is, under many regulatory frameworks, automatically owned by the person that owns the solar system, absent contractual agreements to the contrary. Many states have established renewable energy programs, which create a market for the sale of SRECs.

Under these programs, states require that a specified percentage of the power sold by utilities in their jurisdiction come from renewable sources. These mandates are called renewable portfolio standards (RPS). To meet the RPS (and avoid fines or penalties), a utility may either generate renewable power itself or purchase SRECs or other renewable energy certificates (REC) from third parties who generate such power.

Often a key component of a solar development project is the ability of the project to generate SRECs, the sale of which can secure a significant revenue stream. Likewise, if intending to use a REC or SREC for purposes of meeting above-code programs such as for LEED-certified green building projects, it will be important to ensure compliance with those program requirements. As with all commodities, monetizing SREC values can require both business and legal expertise.

NO. 8: ALLOCATION OF RISK

An inherent component of solar energy transactions is risk, both operational and regulatory. The owner of a solar system relies on the system's performance, yet a variety of factors, such as component defects, shade from neighboring buildings or foliage, or even severe weather, may adversely impact performance. A solar system's failure to perform as predicted can have significant economic impacts, and anticipated cost savings can quickly vanish.

In addition, if the regulatory programs or incentives fueling the SREC market are modified or revoked, the assumed financial benefits may not be realized. While these and other iterations of operational and regulatory risk cannot be eliminated entirely, informed participants in the solar industry should identify and evaluate such risks, contractually allocate them accordingly, and strive to ensure that deal pricing accurately reflects such allocation.

NO. 9: OPERATIONS AND MAINTENANCE

Like all machinery, solar systems require periodic maintenance and repair in order to operate efficiently and reliably. System owners may seek to engage a third-party contractor to perform operations and maintenance services. The ongoing costs of such services should be factored into the owner's financial models. Further, maintenance responsibilities should be accounted for in addressing the allocation of operational risks.

NO. 10: MARKET CONDITIONS

Throughout the life of a solar energy project, numerous external factors may affect the project's success. Before the first watt is ever generated, the various available incentives influence whether, what type, and between whom a deal gets done. Regulatory, zoning and permitting issues can make or break solar development. Another key component is the ability to interconnect to the electric grid. And if RPS programs increase or decrease renewable energy mandates, or if there are changes in the popularity of sustainability initiatives, it could result in significant shifts in the marketplace.

Overall, at present, solar energy development and regulatory programs are inseparably linked. Counsel should assist clients by staying up to date on developments in the solar marketplace and the legislative and regulatory arenas. As conditions change, counsel should consult with their clients on the potential impacts to their solar projects. This can be a key factor in helping clients to make reasonable predictions regarding the future of the solar market and to maximize their opportunities for solar success.