

The Law Of BIOMASS

A Guide to Business and Legal Issues



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WELCOME TO THE LAW OF BIOMASS

May 2010

Dear Member of the Biomass Community,

As changes in the energy markets and in views on natural resources create a compelling case for renewable and sustainable energy, biomass is emerging as a positive solution. As this industry continues to develop, there are many business and legal issues that are important to developers, investors, lenders, contractors, regulators, and others involved in the biomass energy industry.

Recognizing the many related legal challenges in this exciting and expanding industry, Stoel Rives LLP Stoel Rives has created THE LAW OF BIOMASS. This guide contains insights and lessons that our team has developed through our position as a market leader in renewable energy legal issues. THE LAW OF BIOMASS focuses on electricity generated from biomass sources.

You have in your hands the first edition of THE LAW OF BIOMASS. This volume is one in a series that Stoel Rives LLP has produced over the past six years; others include *The Law of Wind—A Guide to Business and Legal Issues* (in its fifth edition), *Lava Law—Legal Issues in Geothermal Energy Development* (in its sixth edition), *The Law of Biofuels—A Guide to Business and Legal Issues* (in its second edition), *Lex Helius: The Law of Solar Energy—A Guide to Business and Legal Issues* (in its second edition), *The Law of Algae: Business and Legal Issues of Producing Algae Biofuels* (in a Wiki edition), *The Law of Marine and Hydrokinetic Energy* (in its fourth edition), and *The Law of Building Green—Business and Legal Issues of Sustainable Real Estate Development* (in its first edition).

We hope that you find THE LAW OF BIOMASS useful. Please contact us with any comments.

Stoel Rives Renewable Energy Attorneys
www.stoel.com/renewableenergy

Chapter One THE LAW OF BIOMASS

—What Is Biomass and What Does a Viable Project Look Like?—

Biopower, or biomass power, is the use of biomass to generate electricity. The term “biomass” encompasses an array of diverse feedstocks or fuels derived from organic materials. Given the capacity of many of these fuels to regenerate year after year, and in light of the fact that some are considered waste, the use of such materials to generate electricity is very compelling at many levels.

I. What is biomass? The following list sets forth some of the typical biomass materials currently being converted into renewable and sustainable energy:

Agricultural Residue – Crop residues such as corn stover (stalks and other nonedible portions of the corn plant) and processing residues such as hulls from the fruit of certain nut varieties.

Animal Waste – Cattle, poultry litter, and swine waste converted to gas or burned directly for heat and power.

Energy Crops – Trees or herbaceous biomass grown specifically for energy.

Forest Residues – Wood fiber such as slash, tree-tops, and other forest thinning from logging operations.

Landfill Gas – The natural byproduct of bacterial digestion of organic garbage.

Pulp and Paper Operation Residues – The byproducts of logging and fiber processing operations.

Urban Wood Waste – Lawn and tree trimmings, wood pallets, and construction and demolition wastes.

II. How is fuel made from biomass? Using biomass as a source of energy has been happening for thousands of years. The typical conversion process was simply to burn the biomass to generate heat, which could be used directly for heating, cooking, and industrial processes, or indirectly to produce electricity. Today there are a variety of processes and technologies that convert biomass into heat, steam, electricity, and other types of fuels and products. The majority of biomass power plants today use a direct fire system (the same kind typically used to burn fossil fuels) to burn lumber, agricultural, or construction/demolition wood wastes to generate steam, which is used to drive a turbine that turns a generator to convert power into electricity. There are also a number of noncombustion methods available that convert biomass into a variety of gaseous, liquid, or solid fuels that can then be used directly in a power plant for energy generation or broken into chemicals that are useful fuels. Other conversion technologies are being developed that use thermochemical and biochemical processes to convert the biomass into gas or liquid that is then used to generate electricity. The following table sets forth some of the more common conversion technologies used to generate electricity for different types of biomass.

BIOMASS

CONVERSION PROCESS TO GENERATE POWER

| | |
|-----------------------------|---|
| Crop Residues | Boiler fuel |
| | Gasification, producing biomass gas |
| Farm Waste | Anaerobic digestion, producing digester gas |
| Food Processing Waste | Dry: boiler fuel or gasification, producing biomass gas |
| | Wet: sludge waste, producing digester gas |
| Municipal Solid Waste (MSW) | Dried, producing boiler fuel |
| | Sorted into refuse-derived fuel and gasified, producing biomass gas |
| | Landfilled, recovered as landfill gas |
| Sludge Waste | Dried, producing boiler fuel |
| | Anaerobic digestion, producing digester gas |
| Wood and Wood Waste | Boiler fuel |
| | Pulp and paper mills, producing black liquor |
| | Gasification, producing biomass gas |

III. What are the elements of a successful biomass project? A project needs the following components to be viable and eligible for financing. Developers should objectively examine their project to make sure they have all these components in place or will have these components in place before investing too much time and money into a project that will not be financeable or profitable.

- *Technology* – The technology to be used to convert the biomass to electricity must be proven and capable of generating reliable estimates of efficiency. Investors and lenders will want a process guaranty from the technology provider to provide assurance that the technology will perform as expected.
- *Feedstock* – The feedstock for the facility must be reliable. If possible, it is best to be able to utilize different types of feedstock to protect against fluctuations in feedstock

processes. Feedstock contracts should also limit price fluctuation. The feedstock should be located within a reasonable distance to keep transportation costs to a minimum.

- *Output* – The project must have customers that will purchase the power. If connecting to the electricity grid, transmission access must be secured and available from the project site.
- *Project Site* – The site for the project must be able to be secured and have access to necessary utilities and transportation. Also permits must be attainable without too much time or expense. Proximity to feedstock suppliers and power offtakers is important because they can have a large impact on the costs of operations. Local support or opposition to the project should also be considered.
- *Economic Viability* – The costs to construct and operate the project must be less than the income the project will receive from selling its power and co-products. Financial modeling must be completed and tested to determine the parameters for construction and operation costs that provide for profitability. Typically, investors and lenders want the financial models to show that, without any tax or government incentives, the project will be profitable.
- *Project Agreements* – Bringing a biomass project on line requires multiple parties with matched expectations working together at all stages of the project. These relationships are memorialized in appropriate agreements that set forth the duties and obligations of the parties. The project agreements also directly impact the creditworthiness of the project because investors and lenders look to these agreements to determine the viability of the project.

The above components of a biomass project are discussed in detail in the other chapters of this book along with other important legal and business issues associated with the production of electricity from biomass.

Chapter Two
THE LAW OF BIOMASS
—Financing Your Biomass Project—
William H. Holmes

Financing a biomass project requires a substantial amount of capital. The financing sources for a biomass project broadly fall into two main categories: equity and debt. The availability of equity or debt for the project often depends on the stage of project development. In addition, making maximum use of available tax incentives and other government incentives may have a significant impact on the overall project financing package. Government grants also present potential funding opportunities for developers of biomass projects. Successfully bringing such projects on-line requires the developer to examine all sources, layering in such sources as appropriate and in the best interest of the project's financial model.

I. Equity Financing. Securing adequate equity is critical to the successful development of a biomass project. Often the equity component is difficult to raise because the equity capital is generally the most at risk capital in the project. This high risk, particularly in a project that utilizes unproven technology, usually requires a higher reward to make the investment worthwhile to the potential investors. Federal and state securities laws further complicate the process of finding public or private equity investments for a biomass project.

A. Securities Laws. To raise equity, a project must offer and sell securities either after registering under the Securities Act of 1933, as amended ("Securities Act"), and applicable state laws or pursuant to applicable exemptions from such registration.

1. Registered Public Offering. Registration requires a project to prepare and file a detailed registration statement with the Securities and Exchange Commission for its review and approval. Unless the securities are going to be traded on a national securities exchange, such as NASDAQ®, the securities must also be registered under the applicable state securities laws. Once the registration statement is effective, the project can publicly offer its securities.

2. Private Offering. One of the most common offering exemptions is pursuant to Rule 506 of Regulation D of the Securities Act for transactions not involving a public offering. In general, sales can be made to an unlimited number of accredited investors (as defined in Regulation D) and up to 35 nonaccredited investors. There can be no general or public solicitation or general advertising, the securities cannot be resold unless registered or otherwise exempt, and the company must satisfy certain disclosure requirements. Securities sold in accordance with Rule 506 are exempt from state registration requirements.

3. Intrastate Offering. Another potential exemption is the intrastate exemption, which exempts from federal securities regulation offers and sales of securities that are offered and sold only to persons in one state. In general, to qualify for the intrastate exemption safe harbor, the issuer must be organized, doing business, and making offers and sales of its securities in the same state; the offers and sales can only be made in that state and cannot be made to any resident of another state within six months of the offering; and any transfers of the securities within nine months of the offering must be made only to residents of that state. The securities must be registered or exempt under the applicable state securities laws.

4. Section 521 Cooperative. For a biomass project, using a cooperative structure may be advantageous if a cooperative will provide a consistent and reliable source of feedstock for the biomass project. In

addition, a cooperative with producer members qualified for certain preferred tax treatment pursuant to section 521 of the Internal Revenue Code is exempt from certain securities registration requirements and taxes. See [Chapter 3](#) of *The Law of Cooperatives* for more information on the three business models involving cooperatives that are often used in renewable energy projects.

B. Types of Investors. Many types of potential investors might be interested in investing in your biomass project. Individuals, institutional investors, and corporations all invest in projects for different reasons. Individual investors are generally best suited for the early stages of a project because of the high risk involved in such investments and because of the lower dollar amounts being invested. Some of the most common types of equity investor categories are:

Self-Financiers – individuals developing or owning the project who put up their own capital.

Friends and Family – individuals investing based on personal relationships with the owner or developer.

Angels – individuals investing for an investment return or other reasons other than a personal relationship with the owner or developer.

Community Members – individuals in the same general location as the project investing for an investment return and the benefits the project will bring to the community.

Institutional Investors – financial institutions investing in the project for investment returns.

Corporate Investors – corporations investing for investment returns or for other strategic reasons.

C. Finding Equity Sources. The best way to attract investors is by doing your homework and making sure that you understand who you are talking to and what motivates them. Things to consider when determining how to focus your equity fundraising efforts are:

Project Development – early-stage investors typically require higher rates of return because the earlier an investment is made in a project, usually the higher the risk.

Project Cost – generally, individual investors fund smaller projects and feasibility-stage developments whereas public offerings, large institutions, or corporations fund larger projects.

Liquidity – possible exit strategies and realizing a return on investment is very important to investors.

Industry Experience – industry experience and connections of investors can be valuable to a project and should be considered in fundraising efforts.

II. Debt Financing.

A. Limited Recourse Debt: Project Financing. Limited recourse financing, also known as project financing, is when the payment of the debt is backed only by the project assets and the revenues the project is able to generate. If the project fails to produce the revenues needed to pay expenses and service the debt, the lender can only pursue the project assets and revenues and not the assets or revenues of the investors.

Because the lender is limited to project assets and revenues to secure repayment of the debt, there is typically an extensive due diligence process by which the lender investigates the project to make sure that it will operate successfully (*i.e.*, pay its bills) even in a worst-case scenario. Complex securitization agreements and structures must be put in place with the lender to make sure that if the project cannot be operated successfully, the lender has recourse. See [Chapter 1](#) of *The Law of Biofuels* (2d edition) for more information on limited recourse debt financing.

B. Full Recourse Debt: Balance Sheet Financing. Full recourse financing, also known as “balance sheet” financing, is when the payment of the debt is backed by the legal obligation of an entity with sufficient financial resources (*i.e.*, its balance sheet) to underwrite the risk that the project will be successful and the debt will be repaid. Balance sheet financing is generally available only to large entities that have substantial liquid and tangible assets, acceptable levels of debt, and a proven track record of earnings. In many cases, balance sheet financing is not an option for biomass projects because the projects and the investors do not have the types of balance sheets lenders require. Even if a project or investor does have the necessary type of balance sheet, full recourse debt still may not be used because the more the balance sheet is used to support project debt, the less it will be available for other corporate purposes. See [Chapter 1](#) of *The Law of Biofuels* (2d edition) for more information on full recourse debt financing.

C. Loan Guarantees. Both the United States Department of Agriculture (“USDA”) and the Department of Energy (“DOE”) have loan guarantee programs that may be available to a biomass project. Because loan guarantees are issued at the discretion of the U.S. government, the issuing agency must perform an environmental analysis under the National Environmental Policy Act (“NEPA”) before the loan guarantee can be finalized. See [Chapter 4](#).

1. USDA Loan Guarantees. The USDA provides loan guarantees through a variety of programs, including the Rural Energy for America Program (“REAP”), the Business & Industry (“B&I”) program, and the Biorefinery Assistance program. See below for more details on REAP. The American Recovery and Reinvestment Act of 2009 (“ARRA”) appropriated \$1.7 billion for B&I loan guarantees. The B&I program is not specific to renewable energy. However, commercially available energy projects that produce biomass fuel or biogas must be located in a rural area and complete two operating cycles at design performance levels to be eligible for B&I loan guarantees. The USDA will guarantee between 60 and 90 percent of the loan, depending on the loan size. The maximum loan amount for a legal entity other than a cooperative is \$10 million, although an exception can be made for loans up to \$25 million. The USDA also offers loan guarantees through the Biorefinery Assistance program, which authorizes loan guarantees of up to \$250 million and competitive grants to assist development, construction, and retrofitting of biorefineries that convert renewable biomass to advanced biofuels. Demonstration-scale biorefineries are eligible for grants and loan guarantees, while commercial-scale biorefineries are solely eligible for loan guarantees. Federal grants can provide up to 30 percent of project costs, and federal guaranteed loans can provide up to 80 percent of project costs.

2. DOE Loan Guarantees. There are two loan guarantee programs being administered by the DOE of interest to biomass projects: one is under Section 1703 of the Energy Policy Act of 2005, and the other is Section 1705 of the Energy Policy Act of 2005, which was added as part of ARRA. The Section 1703 program is available only for innovative projects, whereas the Section 1705 program is available for commercial

renewable energy projects. See [Chapter 4](#) of *Show Me the Money: The Law of the Stimulus Package* (2d edition) for more information on this program.

III. Tax Incentives and Other Tax Considerations. Tax considerations may play a crucial role in the overall financing of a biomass project. Like many other alternative energy sources, biomass may qualify for certain tax credits and other tax incentives that, if properly utilized, can provide significant financing advantages. Making the most out of the available tax incentives also may strongly influence choice-of-entity, debt vs. equity, and other financing decisions. Identifying and maximizing the benefit of tax and other government incentives require careful advance planning. For a discussion of the federal, state, and local income tax issues associated with a biomass project, see [Chapter 6](#).

IV. Government Grants. Government grants, including those described below, may be available to your biomass project. Note these opportunities are current through March 30, 2010 and may not include all grants that may be available to you or your project. Because many grants are issued at the discretion of the U.S. government, the issuing agency may be required to perform an environmental analysis under NEPA before the grant proceeds can be provided to a project. See [Chapter 4](#).

A. Research, Development, Demonstration, and Deployment Projects. The DOE's Office of Energy Efficiency and Renewable Energy ("EERE") was allocated \$800 million to support biomass energy projects. These funds are intended to support applied research, development and deployment activities.

B. Advanced Research Projects Agency – Energy. ARRA also provided the Advanced Research Projects Agency – Energy ("ARPA-E") with \$400 million to support innovative energy research that could include novel biomass technologies.

C. Wood-to-Energy Grants. ARRA established \$50 million to promote increased utilization of biomass from small diameter trees and woody biomass located on federal, state, and private lands. These wood-to-energy grants used for activities on state and private lands are not subject to matching or cost-sharing requirements.

D. Rural Energy for America Program. REAP provides funding for energy audits, feasibility studies, rural energy efficiency projects, or rural renewable energy production. Grants under this program may fund up to 25 percent of project costs (capped at \$500,000), and loan guarantees may fund up to 75 percent of project costs (capped at \$25 million).

E. Repowering Assistance. Biorefineries in existence when the 2008 Farm Bill was passed are eligible for payments to reduce their dependence upon fossil fuels. Payments are available to pay for costs to install new systems that use renewable biomass or for new production of energy from renewable biomass.

F. Bioenergy Program for Advanced Biofuels. The Bioenergy Program for Advanced Biofuels provides payments to agricultural producers of feedstocks for advanced biofuels. Producers of advanced biofuels may be paid based on quantity and duration of advanced biofuel production and on net nonrenewable energy content of the advanced biofuel. Advanced biofuels include fuels derived from renewable biomass other than corn kernel starch, such as sugar and starch, waste material, biodiesel made from renewable biomass, biogas produced

through the conversion of organic matter from renewable biomass, butanol or other alcohols produced through the conversion of organic matter from renewable biomass, and other fuels derived from cellulosic biomass. Facilities that exceed total refining capacity of 150 million gallons per year are able to receive only 5 percent of the program funds.

G. Biomass Research and Development. Funding has been allocated to provide grants, contracts, and financial assistance to eligible recipients to carry out research on and development and demonstration of biofuels and biobased products and the methods, practices, and technologies for the production of biofuels and biobased products. Most grants are limited to 50 percent of project cost. Research projects are more likely to receive funding under this program if they have a partnering agreement with universities, national laboratories, or other research agencies.

H. Rural Energy Self-Sufficiency Initiative. The Rural Energy Self-Sufficiency Initiative provides grants for community-wide energy assessments. Community-wide energy assessments are audits of a community's (rather than an individual user's) energy use and analysis of where energy savings can be obtained. Additional grants are also available under this program to develop and install integrated renewable energy systems. Grants are limited to 50 percent of project cost.

I. Biomass Crop Assistance Program. The Biomass Crop Assistance Program ("BCAP") was created to support the establishment and production of eligible crops for conversion to bioenergy, and to assist agricultural and forest landowners with the collection, harvest, storage, and transportation to a conversion facility of these crops. Assistance under BCAP includes payments for up to 75 percent of the cost of establishing an eligible crop within a BCAP project area, annual payments to support production, and matching payments of up to \$45 per ton of eligible biomass feedstock for two years for collection, harvest, storage, and transportation to a biomass conversion facility.

J. Forest Biomass for Energy Program. The Forest Biomass for Energy Program is a competitive research and development program to encourage the use of forest biomass for energy. This program will be administered by the USDA's Forest Service. Priority project areas include developing technology and techniques to use low-value forest biomass for energy production, developing processes to integrate energy production from forest biomass into biorefineries, developing new transportation fuels from forest biomass, and improving growth and yield of trees intended for renewable energy production.

K. Community Wood Energy Program. The Community Wood Energy Program provides grants to state and local governments to develop community wood energy plans. Eligible recipients can receive matching grants of \$50,000 to acquire wood energy systems for public facilities.

V. Preparing Project Agreements with Lenders and Investors in Mind. The push for renewable energy and the green economy combined with the multiple grants, guarantees, bonds, and other stimulus programs and facilities have resulted in many options for the developer of a biomass facility to consider when creating its financial model. The one threshold requirement that all financing options share, and the one required characteristic that should consume the biomass project developer's attention, is the notion of "creditworthiness."

Simply put, creditworthiness is a creditor's measure of the project company's ability to meet its debt obligations. Investors and lenders must be able to rely on the biomass project to generate a stable and predictable stream of cash flow necessary to ensure repayment of their loans and attainment of necessary returns. "Investment grade" projects are projects that have contractually sound cash flows, also known as "contracted-for revenues." Such cash flows are the result of well-negotiated key throughput and development agreements that form the basis of the lender's security structure and credit analysis, hence underpinning the project's ability to attain appropriate financing. Developers of biomass and other energy projects, however, often approach key project agreements—leases, rights of way, feedstock agreements, power purchase agreements, etc.—as if they were independent of later efforts to finance the project. This approach is problematic, and experienced developers negotiate project agreements with the needs of lenders and investors in mind.

For example, a project finance lender will always require the developer to collaterally assign its interest in all key project agreements. The lender will insist that it have the right to receive default notices directly, and the right to cure those defaults. Lenders will want at least as much time as the developer has to cure a claimed default and will often require additional time, especially if there are several banks involved in the financing. Tax equity investors will often demand similar notice and cure rights. The developer should also consider drafting project lender and investor protection provisions that protect the lender or investor if the project goes into foreclosure or the developer goes bankrupt. In cases where the developer is familiar with the preferences of a known lender or investor who will be involved in project financing, these provisions can be set forth in detail, either in the body of the project agreement or in an agreed-upon form of collateral assignment agreement to be attached to the project agreement as an exhibit.

If the lender or investor is unknown at the time the project agreement is entered into, or if the developer and its counterparty are unwilling to negotiate detailed lender and investor protection provisions until the lender or investor is actually at the table, the project documents should at least include provisions that authorize the developer to collaterally assign the project agreement without counterparty consent and that require the counterparty to work with the developer in good faith to negotiate and deliver a collateral assignment agreement or other protective instrument in a form reasonably satisfactory to a lender or investor. Such provisions typically require the counterparty to execute such estoppel agreements and other instruments as may be reasonably required in connection with a financing of, or investment in, the project.

Sophisticated lenders or investors will also perform due diligence to make sure that the project agreements adequately address all of the key issues outlined in the *Law of Biomass*—for example, a power purchase agreement must include provisions that explain to the satisfaction of the proposed lender or investor how the risk of curtailment will be managed. The financing of the project begins on day one, and all project documentation must carefully consider how to address the likely concerns of the lenders or investors who will supply the funds required to build and operate the project.

Chapter Three
THE LAW OF BIOMASS
—Real Estate Issues—
Richard R. Hall, Quentin M. Knipe

This chapter focuses on real estate law. Real estate is generally defined as land, improvements, and appurtenances. Improvements include buildings, other structures, and fixtures. Appurtenances are things so closely associated with land and improvements that they are deemed to go with the land and improvements when transferred. Appurtenances can include both rights (e.g., water rights and access rights) and obligations (e.g., the obligation to pay water assessments and the obligation to comply with private use restrictions). Legal issues related to real estate are mostly governed by state law. Although most states follow the same general principles, important differences may exist from state to state.

For purposes of this chapter, we assume that the biomass project will include a central processing facility built on a single parcel of land (the plant site) and various inputs and outputs crossing other land. We will explore ways of securing the right to utilize the plant site and the right to use the land of others. Also, we consider some of the investigations that are necessary to make sure the land and improvements and the associated rights and obligations (collectively, the real estate) are adequate for the needs of the project.

I. Securing Rights to Use the Plant Site. There are several different ways to secure the right to use the plant site: by purchase, by lease, by easement, or by license. These concepts vary in the amount of control over the land they give to the developer of the project. Generally, the continuum looks like this:

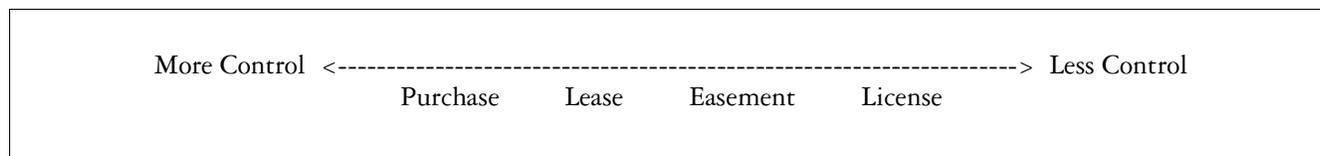


Figure 1 - Spectrum of Control

We explore each of these concepts more fully below. Before we do that, a note of caution: The title of an instrument is not nearly so important as the specific terms and provisions. For example, while a purchased interest generally imparts more control than an easement, it would be possible to create a purchased interest so encumbered by restrictions that it gives less control to the developer than a favorably worded easement. The devil is in the details.

Purchase. Generally, a purchase involves the acquisition of an interest in real estate called a “fee simple estate.” This type of interest gives the most rights to its owner. It entails the right to full possession of the land and the right to exclude others from the land. It continues indefinitely until transferred by the owner.

Lease. Generally, a lease involves the acquisition of the right to fully possess and exclude others from land, but only for a definite period of time, after which those rights revert back to the owner of the land. Usually, the person acquiring a lease interest (the tenant or lessee) makes periodic payments (rent) to the owner of the land (the landlord or lessor).

Easement. Generally, the acquisition of an easement entails the acquisition by one person (the easement holder) of the right to use land of another for a specified purpose. The right of use is less broad than the right of full possession acquired in a lease or purchase scenario. Depending on the wording of the easement agreement,

the landowner may retain the right to use the same land and to allow others to use the same land for the same or different purposes, so long as those uses do not interfere with the use by the easement holder. The easement may continue indefinitely or only for a specified period of time.

License. Generally, the acquisition of a license entails the acquisition of the right to use the land of another for a specific purpose. It differs from an easement in that it is revocable at any time by the landowner. Obviously, most developers of biomass projects are not going to want to make major investments in a project based on a mere license. On the other hand, if the operation involved mobile equipment, say a trailer-mounted facility that does not require a large, location-specific investment, a license might be sufficient.

Although the law recognizes these four distinct concepts, in practice the lines between are often blurred. An agreement to purchase a fee simple estate might provide for a license to enter the property to conduct studies prior to concluding the transaction. A lease might contain an option to purchase. An easement that continues only so long as the easement holder makes periodic payments to the landowner might have attributes of both a lease and an easement. An instrument that purports to create an irrevocable license might be more properly analyzed as an easement. The parties might use a different label entirely. For example, license agreements are sometimes called access agreements or exploration agreements. Sometimes the parties will start with a license agreement to let the developer enter the land for studies before negotiating a more permanent arrangement. The most important thing to remember is that the law will generally respect the clearly expressed intent of the parties, and it is always best practice to spell out exactly what the parties intend rather than rely on what the law may imply.

In deciding how to tie up the plant site, the developer should consider not only its own need for control of the property but also the needs of prospective lenders. The developer's interest in the real estate is likely to be a key source of the security for the developer's lender. Even if the developer can get by with less control over the plant site, it is a safe bet that its lender would rather have more. A lender may focus more on the value of the property generally, rather than its suitability for a particular use. A fee simple interest in a parcel of property that can be used for many uses is likely to be perceived as providing more security to a lender than an easement to use a parcel for only a very specific biomass project. On that score, a lease will fall somewhere between a fee simple interest and an easement, depending on the permitted uses of the property, the length of term, whether the rent is below or above market, and whether the lease agreement contains provisions designed to protect the tenant's lender if the tenant defaults. Such provisions can be extensive and vary from lender to lender, so it is a good idea to build in some flexibility to amend a lease to address particular lender requirements. No lender is likely to perceive much security in a license arrangement.

Although the best practice is for the parties to agree on all the terms of the deal, the law will sometimes imply terms to fill gaps. There are limits, however, to how far the law will go to imply terms that are not supplied by the parties. Some terms are considered so essential to the deal that the law will consider the arrangement unenforceable if the parties fail to agree on them. Besides being essential for the creation of an enforceable contract, it generally makes sense for the parties to try to pin down the key "business" issues before spending time and money working through more technical "legal" issues. One way this is commonly done is by first agreeing on a term sheet or letter of intent that sets forth the most important terms. Because the law will imply unessential terms, however, it is best practice to be clear in a term sheet or letter of intent that the parties do not intend to

create an enforceable arrangement until they negotiate and sign a more complete agreement covering all the terms of the deal.

Below we discuss some of the key terms upon which the parties should agree:

Legal Description. In any arrangement involving real estate, one of the most important terms is a precise, unambiguous description of the land involved. Courts will generally find an arrangement unenforceable before they will attempt to resolve uncertainties as to which land is involved. For this reason, very detailed descriptions are often called “legal descriptions.” On the other hand, courts seem to tolerate less specificity in descriptions as you move down the spectrum of control (see figure above) from a purchase to a mere license. Because the lines are not always clear, the more investment you have at risk, the more you should err on the side of having a very specific description of the land. Even though a developer may have a tolerance for risk in this regard, lenders and title insurers will not.

Price. Whether it is the price of a fee simple estate or an easement or the amount of rent payable under a lease, the courts will not guess what the parties had in mind. This issue often arises when the parties agree to pay a “market” rent or a “market” price but fail to agree upon a specific procedure for determining the exact amount. Some courts will refuse to enforce such agreements.

Deposits. Sometimes, usually in a purchase scenario, a landowner will want a developer to deposit some money up front, before a transaction is concluded and the full price is paid. This can serve several purposes. It can show that the developer is more committed to the deal than might be the case if the developer only offers its signature on paper. For this reason, these deposits are often called “earnest money.” This purpose is obviously more important if the developer’s creditworthiness is questionable. This purpose can be served even if the deposit is fully refundable due to the failure of conditions. Another purpose for such a deposit is to compensate the landowner for taking the property off the market while the developer studies the feasibility of developing the project. The need to put up money for this purpose will depend on the desirability of the property, the level of demand, and the length of time the developer wants to study the property. This purpose is only served if the earnest money is nonrefundable. A deposit serving this function is similar to option consideration, discussed below. Sometimes the agreement will be structured so that the deposit functions as the price the developer must pay if the developer breaches its obligations under the agreement (*i.e.*, liquidated damages). Depending on the wording of the agreement, forfeiture of the deposit could be just one of the landowner’s possible remedies or the landowner’s exclusive remedy. Because deposits can serve several different functions at the same time, there is no standard amount. Further, sometimes parties will agree that the deposit will start out as fully refundable and then become fully or partially nonrefundable over time.

Term. As mentioned, a lease arrangement usually continues for a specified term. This can be a single block of time, but more often it is an initial period followed by one or more optional extension periods. Some courts will allow the parties to agree that the term can continue indefinitely, but it is important to be very clear as to the parties’ intent. Otherwise, the courts might instead conclude that the parties failed to agree upon an essential element of the deal (the length of the term).

Options and Conditions. Generally, an agreement to acquire an interest by purchase, lease, easement, or license creates an obligation on both parties to conclude the transaction. Sometimes, a developer may not want to

incur such an obligation until the developer has had more time to resolve uncertainties (*e.g.*, study the property, obtain permits, or secure financing). In that situation, the developer might ask for an option. Under an option, the developer generally incurs no obligation to conclude the transaction unless and until the developer exercises the option. Once exercised, the option works just like a typical agreement. Even under a typical agreement (one that does not include an option concept), however, the developer can avoid the obligation to conclude the transaction by inserting conditions that must be satisfied before the transaction is concluded. In that situation, however, the developer will probably have some obligation to try to satisfy the conditions, even if it is merely an obligation to proceed in good faith. If the developer wants to avoid all obligations to pursue the project, the option is the better way to go, but that flexibility usually comes at a cost. In our experience, if the developer is committed to trying to satisfy the conditions, it can probably get control of the land for less money by using an agreement with specific conditions rather than an option. That is because the landowner is likely to attribute some value to the developer's commitment to try to satisfy the conditions. If the developer is unwilling to make any commitment, but still wants to tie up the land using an option, the developer will probably have to pay more for that privilege in the form of additional option consideration.

Often we see developers try to put off difficult decisions as to key terms by leaving them for later determination. Often this is done in the name of preserving flexibility. Although there may be some psychological value in signing an agreement before all the essential terms are pinned down, the legal value is questionable because the enforceability of the entire arrangement is at risk when essential terms are missing. All essential terms should be pinned down before major investments are made. Sometimes developers try to solve this problem by creating contractual obligations to resolve these issues in the future. Unfortunately, the enforceability of these so-called "agreements to agree" is also questionable.

II. Securing Rights to Cross Other Land. Recall that we previously assumed the biomass project would consist of a main plant site controlled by the project developer and various inputs and outputs crossing the land of others. In the previous section, we discussed ways of securing the main plant site. Now we will discuss ways of securing the right to bring inputs and outputs across the land of others. Such inputs and outputs include, for example, pedestrian and vehicular ingress and egress, electrical transmission lines, gas pipelines, water and sewer lines, telecommunication lines, and raw material and waste product pipelines.

Recall also that we previously discussed various ways to secure real property rights (purchase, lease, easement, and license). Of these, the easement is particularly well suited to securing the right to bring inputs and outputs across the land of others. Therefore, in this section, we will explore easements in more detail. As previously discussed, the acquisition of an easement entails the acquisition by one person (the easement holder) of the right to use land of another for a specified purpose.

An easement can be appurtenant or in gross. An appurtenant easement is one that is legally associated with a particular parcel of land, such that it will be deemed to go with that land when that land is transferred. An easement in gross, on the other hand, is not associated with a particular parcel of land, but simply runs in favor of a particular person or entity. An easement for vehicular ingress and egress (*i.e.*, vehicular access) is usually made appurtenant to the land being accessed, so that it will always go with that land, because it would make little sense for the access rights to be owned separately. On the other hand, an easement for electrical transmission is usually

made in gross for the benefit of a utility provider and does not depend on that utility provider owning any particular parcel of land.

That brings up another important point. The appropriate easement holder will not always be the project developer. Utility providers will generally want to own and control their own easements, if they will own and control the facilities located in those easements, so it will sometimes be more important to have a landowner agree to grant an easement to a utility provider than to have that landowner grant an easement to the project developer. Furthermore, utility providers usually have their own forms of easements they require, and that fact should also be contemplated in any agreement with a landowner regarding easements.

An easement can be exclusive or nonexclusive. This refers to the landowner's right to use, and permit others to use, the same easement area for the same or different purpose. Likewise, thought should be given to the easement holder's right to allow others to use the easement area, together with or in the place of the easement holder, and the easement holder's ability to subdivide the land served by the easement and thereby subdivide the use of the easement area. Best practice is to address these issues expressly in any easement agreement.

Finally, thought should be given to who will be responsible for maintaining the easement area and the facilities located therein and who will pay for the cost of such maintenance. These issues can get tricky if use of the easement area is shared, as in the case of a shared road. Again, best practice is to address these issues expressly in any easement agreement.

III. Investigating the Real Estate (Due Diligence). When dealing with the acquisition or lease of real property, a number of issues relating to the condition of title and the physical condition of the property must be thoroughly evaluated. The function of the due diligence process is to independently assess these issues, verifying all representations made by a prospective seller or lessee as well as uncovering pertinent facts, liabilities, and encumbrances affecting the property that may not have been disclosed but that are important to the biomass facility developer. Factors that must be considered as part of the due diligence process include the following:

A. Property Title.

1. **Title Review.** The title review process is used to determine the condition of the property title to be transferred or leased from the property owner as well as identify potential title defects. The condition of title is determined largely by examination of the documents that have been recorded in the public records, under a legal framework that encourages persons acquiring interests in real estate to record evidence of those interests in the public records and disfavors those who fail to do so. Typically, the acquiring party will obtain and review a title commitment (often referred to as the title report) prepared by a title company. The title commitment provides documentation of the current state of title to the property as it appears in the public records, and should include a complete legal description of the property to be acquired. The title commitment will contain a list of all current title exceptions of record such as unpaid taxes, leases, easements, contracts, mortgages, liens, and restrictions. In order to thoroughly review such matters, it is important to obtain, along with the title commitment, legible copies of all recorded documents referenced in the title commitment. The commitment may also contain information regarding rights and benefits appurtenant to the property being acquired, such as access or utility easements over adjoining properties. During the title review process the acquiring party should work with the title insurer to determine what additional insurance coverages and title

endorsements may be available and of benefit to the acquiring party. Often these relate to title issues that would not be revealed by a search of the public records. Following payment of the necessary premiums, execution and delivery of the necessary documents, and confirmation that no new title exceptions have arisen since the title commitment was issued, the title company will issue a title policy insuring title to the property, subject to those title exceptions and encumbrances listed in the title commitment.

2. **Survey.** Surveys often are one of the most useful tools in the due diligence process. It is generally difficult to determine the location and boundaries of a property based on the legal description alone. A survey allows the acquiring party to map the property and verify the accuracy of the legal description against the acquiring party's understanding of the property. With the more detailed ALTA survey, the acquiring party is able to determine the precise location of utility and other easements and physical encumbrances identified in the title commitment, as well as the precise location of physical improvements located on the property. The ALTA survey may also disclose physical encroachments that may not be identified in the title commitment or readily apparent from a physical inspection of the property. The preparation of the survey should be initiated early in the due diligence process so as to allow adequate time to address any title deficiencies identified by the survey prior to the end of the due diligence period or closing.

3. **Restrictive Covenants and CC&Rs.** The acquiring party should carefully evaluate any restrictive covenants, CC&Rs, or similar encumbrances that may burden the property and restrict its use. Such restrictions can significantly restrict or entirely prohibit certain uses, and oftentimes the restrictions created by such documents may not be removed without the consent of adjoining landowners or other third parties.

4. **Taxes and Assessments.** As part of the title review process, the acquiring party should determine what real property taxes and assessments, including special assessments, will apply to the property after closing. The acquiring party should also consider what impact the sale or lease of the property, along with the development of the facility, will have on the real estate taxes levied against the property. Often, a change in use, such as from agricultural use to industrial, can trigger a substantial increase in real estate taxes.

B. Approvals and Entitlements.

1. **Current Approvals and Permits.** A biomass facility will often rely on an existing facility as the source of its feedstock. Therefore, a necessary step in the due diligence process is an evaluation of the current land use and zoning restrictions and entitlements to confirm the compliance of the current use. The acquiring party should check with the applicable government entities (*i.e.*, city, county, regional, and state) to determine in advance which land use entitlements currently apply to the property and the current use, and what additional permits, if any, may be required.

2. **Required Approvals and Permits.** The development of a biomass facility will likely result in a change in the use of all or a portion of the property. The acquiring party should determine what permits and approvals will be required to develop and operate the facility. In connection with the required entitlements, it is important to focus on the length of the approval process and determine whether any significant exactions (*e.g.*, fees, infrastructure improvements, open space dedication, etc.) will be required in conjunction with the necessary approvals. The required permits and approvals may include the following:

a. **Conditional (Special) Use Permits.** If the proposed use is not a “permitted use” under the current planning code or zoning regulations, the acquiring party should evaluate the procedure and schedule for obtaining a conditional use permit or similar approval. It should be noted that county and municipal entities will at times use the conditional use permit process as an opportunity to impose additional conditions on the proposed use that may impact the viability of a project.

b. **Variances.** If the proposed facility does not comply with existing building code or land use restrictions (*e.g.*, height, set-back, operating hours, noise, etc.), a variance from the local land use authority may be required. Variances are typically discretionary in nature, and their issuances can often be accompanied by additional conditions on the proposed development.

c. **Public Road Access.** The acquiring party should confirm whether the property has adequate access to and from public roadways. The unavailability of adequate access to public roadways can seriously impair the development of a project and require a property owner to seek access from adjoining landowners, which may come at a significant expense. If new or additional access is required, the acquiring party should work with the local government and adjoining landowners to confirm if additional access is possible and the procedure, cost, and lead time for establishing such access.

C. **Environmental Evaluation.** Environmental due diligence evaluates current and former property uses in an effort to determine the existence of environmental impacts and liabilities from former property uses, and whether environmental regulatory schemes may limit the property use. By performing environmental due diligence on a property prior to purchase or lease, the acquiring party can establish the baseline conditions of a property, assess the potential liability or risk associated therein, and determine what environmental use restrictions may apply to the project. The environmental due diligence assessment, when properly conducted, also establishes the “Innocent Landowner’s Defense” under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”). The environmental review is a crucial component of the due diligence process. While the following identifies certain aspects of the environmental evaluation process, the reader should be aware that a comprehensive overview of the necessary environmental due diligence tasks is well beyond the scope of this chapter.

1. **Phase One and Phase Two Environmental Assessments.** A Phase One Environmental Assessment provides the acquiring party with a general overview of the environmental condition and environmental history of a particular property and surrounding properties, focusing on the possible presence of hazardous materials. Further, the intent of performing the Phase One assessment is to identify any problems, whether actual or potential in nature (*e.g.*, underground storage tanks, hazardous materials contamination), by way of a comprehensive review of, among other things, historical documentation, regulatory databases, and a walk-through inspection of the site. If problems are revealed during the course of the Phase One inspection, the Phase One report will generally recommend specific follow-up testing, remediation, and/or studies. A Phase Two assessment is typically done, if necessary, as a follow-up to a Phase One report and involves physical inspections and testing of the property, such as core samples and ground water testing, typically focusing on the specific issues of concern identified in the Phase One report. If the presence of regulated hazardous materials contamination is confirmed by the Phase Two report, further reporting, monitoring, investigation, and/or remediation may be necessary, based upon the extent and magnitude of that contamination. As Phase One and

Phase Two reports may reveal issues that may take unexpected lengths of time and additional resources to work through, it is advisable that the prospective acquirer of the real estate in question commence with performing such environmental assessments early on in due diligence process. Delaying such activities may not allow the environmental consultant adequate time to complete the review. Additionally, should the assessments disclose issues that need to be addressed, any unnecessary delay may limit the performance of appropriate follow-up studies and tests in a timely fashion. Finally, as a Phase One assessment does not for the most part entail the performance of specific inspections for the presence of toxins such as asbestos, lead (in paint or in plumbing), or radon, nor does it set forth any wetland delineations, additional studies may be warranted. The purchaser would be wise to discuss these issues with its environmental consultant to ensure that such issues are adequately addressed and the steps necessary to perform such activities are taken into consideration.

2. **USTs and ASTs.** Underground storage tanks (“USTs”) or aboveground storage tanks (“ASTs”) are often the source of hazardous materials contamination. If USTs or ASTs are located on the property, there may be affirmative reporting, removal, and/or closure obligations for the property owner related to those tanks. If USTs or ASTs have been removed from the property, the acquiring party will want to verify that proper site closure procedures were followed and completed in connection with the tank removal prior to taking title to the property.

3. **Environmental Operating Permits.** Because many biomass facilities are developed in conjunction with existing feedstock-related operations, it is important to determine whether the existing use of the property or the proposed facility use requires any environmental operating permits or triggers any reporting obligations related to air or water quality. The acquiring party should obtain copies of all existing environmental permits, plans, and reports and check with the applicable enforcement agencies to determine whether there are existing or past violations, or nonconformance issues related to the property. The acquiring party should also determine what environmental permits and/or reports will be required in connection with the proposed biomass facility. It is usually good practice to contact the applicable air and water quality agencies with jurisdiction over the property to determine procedures and timing for obtaining and/or transferring any necessary permits.

4. **Wetlands.** The presence of wetlands can limit the use of all or a portion of the property. In light of this fact, it is important to check with the applicable government agency to determine whether any portion of the property is considered wetlands. Wetlands and certain uplands located near navigable waters are under federal jurisdiction (U.S. Army Corps of Engineers) under section 404 of the Clean Water Act, 33 U.S.C. § 1344. If wetlands are present, any proposed use or development may be subject to strict regulatory requirements relating to filling, cutting, or relocating wetlands areas. It should also be noted that wetlands are not always “wet” or readily apparent to the casual observer. Generally, the analysis of what constitutes a wetland is focused on vegetation and wildlife characteristics, rather than the presence of surface water.

5. **Flood Zones.** The acquiring party should check with the local government agency to determine whether any portion of the property is located in a designated flood zone. Flood zone designations can limit the development potential of the property, result in additional building requirements, and lead to increased insurance costs.

6. **Seismic Safety Zones.** Some states in seismically active areas of the country (*e.g.*, California) maintain seismic safety zone maps, similar to flood zone maps. In such states, the acquiring party should determine whether any portion of the property is located in a seismic safety zone, as such designation, like flood zones, may adversely affect the development potential of the property, result in additional building requirements, and lead to increased insurance costs.

D. Code Compliance and Physical Condition.

1. **Building Code Compliance and Structural Inspection.** In addition to zoning and land use permit compliance noted above, the acquiring party should confirm that any existing structures and improvements on the property are in compliance with the applicable building code. This is particularly true if the acquiring party intends to use such structures or improvements. The acquiring party should consider having a qualified engineer or building inspector determine the condition of such improvements and identify any potential problem areas, such as deferred maintenance and necessary repairs. The acquiring party will want to determine the cost and schedule of any necessary repairs to the property. If work is being performed on the improvements prior to closing, the acquiring party should obtain copies of any design or construction contracts and determine whether the seller's rights under those contracts are assignable to the acquiring party. The acquiring party should also determine whether the contractor(s) has been and is being paid and whether proper lien waivers have been (or will be) obtained by the seller for work performed prior to closing and that it obtains adequate protection from any mechanic's liens related to pre-closing work on the property.

2. **Parking.** In addition to confirming access to public roadways, the acquiring party should verify that the property has sufficient parking, including truck parking if necessary, for the intended facility use. On-street parking should not be relied on to address facility parking needs.

3. **Utilities.** The acquiring party should verify that the property has adequate utility services available and determine the procedures for entering into provider agreements with the appropriate utility providers. If inadequate service exists or new service is required, the availability, timing, and costs of upgrading the existing utility service should be determined prior to closing.

E. Water Availability. It is important to determine what the water requirements are for the proposed facility and how those requirements will be met. If a property is fully serviced by an existing water and sewer utility service, then the acquiring party should verify that adequate water service can be acquired from the service provider. If the facility will require the use of water rights, the acquiring party must verify the availability of those rights, both physically and legally, and be aware of any legal use restrictions on those rights. In evaluating the legal right, several factors must be considered. First, the place of use for the right must include the subject property. Second, the designated type of use should include a industrial or similar use designation so as to include the proposed biomass facility use. In conjunction with the designated use, the duration of use should be confirmed (*i.e.*, year-round or seasonal). Third, the acquiring party should confirm the point of diversion or source of such right. If the point of diversion is not located on the property, access to the point of diversion (typically in the form of an easement) along with rights for the water transfer system should be confirmed. In addition to the legal factors outlined above, the acquiring party must also verify that the actual "wet" water exists. Verifying the legal rights alone is not sufficient. Water sources and the conveyancing systems should be thoroughly examined

and tested during the due diligence period to confirm that the necessary water quantities are available from the designated systems and sources. Finally, in most states, a water right is a separate and distinct real property right, severable from the underlying property. The acquiring party must confirm that the title to the water right, like the title to the land, is not subject to any title defects, exceptions, transfers, or liens.

Chapter Four
THE LAW OF BIOMASS
—Siting and Permitting Projects—
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This section involves the critical issues of siting and permitting a typical biomass plant.

I. Location: Key Issues in Site Selection. Selecting a project site or expanding an existing facility requires analysis of feedstock availability, transportation requirements for feedstock, and local and state land use restrictions. Factors such as the location of fuel supplies, rail lines, access roads, and land ownership will impact the number of agencies and the level of governmental involvement in a particular project.

A. Access to Feedstock. Evaluating a proposed biomass project's location starts with assessing the site's access to the agricultural, organic, or other matter to be converted into fuel. Proximity to feedstock usually drives site selection as the closer the feedstock is to a facility, the lower the production costs. Developers must consider the amount of feedstock required to produce an economically feasible amount of biomass to process and whether projected transportation costs allow for profitability. A project in the Midwest was recently withdrawn because of the project proponent's failure to locate the project near a railroad line needed to provide delivery of a feedstock.

B. Utilities. Developers should also consider whether existing pipelines, easements, and transmission facilities are in place, and, if not, what types of permits, licenses, and easements may be required to bring energy to, or from, the facility. Selecting a location with ready access to water, existing electricity connections, and a means of disposing of wastewater is critical. If a power supply is required, distributed (on-site) power generation systems allow for greater energy production and insulate a project from local electricity failures. Development of a related cogeneration system may trigger additional permitting requirements that should be identified during site selection. Accordingly, permits, licenses, or agreements with local utilities may be required and should be confirmed before site selection.

II. Siting and Permitting.

A. The Regulatory Energy Facility Siting Process.

State Siting. Although siting approval of biomass projects is generally subject to local jurisdiction, states such as Washington, Oregon, Minnesota, and California have state energy facility siting councils or boards that have jurisdiction over energy facility siting decisions in the state where the capacity of the energy facility meets or exceeds a certain size. For example, in Oregon, projects with a capacity of approximately 18.6 megawatts per year ("mg/y") or more are subject to the "one-stop" jurisdiction of the Oregon Energy Facility Siting Council. In California, projects greater than 50 mg/y are generally subject to the jurisdiction of the California Energy Commission. Jurisdiction of such a siting entity typically preempts local siting authorities.

Local Siting. If a project falls below the above noted jurisdictional threshold, is located in a state that does not have "one-stop" state siting jurisdiction, or does not have any siting process for biomass projects, the siting process will be subject to local jurisdiction, which, for biomass projects that are colocated with agricultural operations, is usually a county governing body. Siting a biomass facility through a state siting process generally

takes longer than siting through a local process because more documentation scrutiny and public review are typically required at the state level.

B. Permitting. Land use and environmental permitting issues should be reviewed by developers early in the project planning process because of the potential for such issues to limit location, design, and financing decisions. The complexity of permitting and the length of time required to fully permit a facility can have significant impacts on the construction time, financing, and eventual viability of a facility. It is advisable that early on in project planning, a land use analysis be completed. These issues are magnified in California and other states with independent environmental planning requirements and on federal or tribal land where the permits require in-depth environmental review.

1. Land Use.

Local Land Use. Many cities and counties have traditional zoning codes or ordinances designating appropriate uses based on overarching planning documents such as general plans. These zoning codes dictate the types of uses and densities that are allowed without a permit (by right) in particular districts. The codes in many instances also allow projects that are not generally allowed by right to be permitted under a Special Use Permit (“SUP”) or Conditional Use Permit (“CUP”). In many jurisdictions, CUPs and SUPs require a more rigorous public review and comment period, and may trigger local environmental review requirements. Limitations in the general plans may also affect the siting of a project if the project is inconsistent with the policies thereon. Some zoning districts may prohibit certain types of uses altogether. Additional issues such as easements, encroachments, and the like should also be reviewed to ensure that they do not impact operations.

Building Restrictions. Most zoning codes also mandate certain building restrictions that relate to height, setbacks, and the like that may affect the operations or design of a project. Issuance of a zoning variance upon a showing of good cause may trigger local environmental review requirements.

Subdivision Map Act. Some states, such as California, regulate the organization of subdivision maps and parcel maps. Any enlargement or carving out of parcels may require compliance with this act and may trigger additional environmental review.

Agricultural Preserves. In many states there are rules or statutes to prohibit or limit the conversion of agricultural land to nonagricultural purposes. In California certain properties have been set aside as agricultural preserves under the Williamson Act and are subject to certain tax benefits if the use remains an agriculture or “agriculturally compatible” use. At one facility, the county found that biofuel plants were not compatible with the Williamson Act and required an additional discretionary approval. A penalty payment is usually required to remove a property from this act and to cancel the contract between the owner and the public agency that originally allowed the land to be set aside.

Urban Encroachment. Because of potential odor, noise, and other aesthetic issues, an examination of the potential for encroachment of urban uses is a necessity.

Traffic. One impact that may be reviewed by a permitting agency is the effect, or additional effect, a project may have on traffic or roadways. If traffic will affect a roadway beyond the existing standard for a

particular roadway, as part of the approval process, an applicant may have to pay or share the costs of upgrades to the roadway along with other nearby owners.

Noise. It is common to have restrictions on operating hours to avoid noise issues. Restrictions on the operating periods may affect the potential economics of a plant.

2. **Environmental Permitting.** As with most industrial facilities, if the plant is being constructed on existing commercial or even agricultural property, an Environmental Site Assessment (“ESA” or “Phase I report”) is generally required before purchase or lease of real property. An ESA helps protect a buyer from liability for hazardous materials and, more important, determines if there are any environmental issues that may affect the value or use of the property. Most lenders require an ESA before financing. The U.S. Environmental Protection Agency (“EPA”) recently adopted new minimum ESA standards that require more extensive procedures and technical experience, and is based on American Society for Testing and Materials (“ASTM”) standards. Other issues to review may include the distance to the nearest human receptors and investigations into neighboring properties that in turn may have environmental issues that may impact the project.

Water Supply. The water supply for a plant is crucial. The choice of supply may increase costs above the feasible level and could impact wastewater disposal as well. A developer should not assume that a water right associated with a nonindustrial use can necessarily be transferred to the facility. Nor should one assume that groundwater wells can be drilled to provide water. Groundwater resources have become a significant issue in California and Midwest states. In Minnesota, Department of Natural Resources (which issues permits for groundwater appropriation) and the Pollution Control Agency (which issues air and other permits) have faced inquiry and heightened scrutiny from agricultural communities regarding the scarcity of groundwater resources in southern Minnesota and the impacts of existing and proposed facilities on area groundwater resources. A thorough review of water rights is an essential aspect of commencing the development or purchase of any biomass project.

The chemical makeup of the water supply may also be an issue: the water must be able to be used for the project, and the wastewater must be able to be handled economically by onsite disposal or some other means. In some instances, wastewater with minimal contaminants is evaporated in adequately constructed, properly permitted ponds. In some areas, the wastewater may need to be disposed of more formally. The energy costs for pumping or transporting well or surface water must be taken into account in instances of more rural facilities.

Water Discharge. In many states, any discharge with the potential to affect groundwater is required to be permitted. The permitting authority can range from the state environmental agency to a regional water quality control board. This requirement can extend to seepage ponds as well as land application (sprinkling) systems. Discharge to dry wells or other receptacles that are constructed at a deeper level potentially require separate permitting as underground injection wells. When the wastewater discharge is to a surface impoundment or sprinkling system and that discharge has the potential to impact surface waters, then that discharge may have to be permitted as a surface water discharge.

If a project will discharge effluent (including stormwater) to surface water, a federal National Pollutant Discharge Elimination System (“NPDES”) permit will be required in most instances. This permit will be issued either by

the local permitting authority under a delegation agreement with EPA or directly by EPA if no delegation agreement exists (e.g., most Indian reservations). This permit may fit within the terms of a general permit (such as for stormwater), in which case permit coverage can be assigned by a Notice of Intent to be bound. However, if the discharge is not within the terms of a general permit, an individual NPDES permit must be obtained. In most jurisdictions, obtaining an individual NPDES permit is a lengthy undertaking.

An option taken by some facilities is to discharge to the local publicly owned treatment works (“POTW”) via a sewer connection. If a plant wants to discharge to a POTW, then an industrial pretreatment agreement or permit may be required. The pretreatment agreement or permit identifies the level of pretreatment required of the facility and the quantity of wastewater it may send to the POTW. Limits are designed to prevent a discharge from interfering with effective POTW operation or passing wastewater through the POTW in amounts detrimental to fish and other aquatic life. Although discharging to a POTW may be a viable means of disposing of wastewater, it potentially leaves the facility open to system development charges, increasing discharge fees over time.

Wildlife/Vegetation/Historical Resources. As with other projects that may be constructed in undeveloped areas, it is usually necessary to conduct a survey to determine whether any protected wildlife or vegetation will be affected. Certain areas may have to be surveyed and any wetlands identified. In some instances, historical uses and/or paleontologic resources must be reviewed. The earlier these issues are identified, the more easily they can be addressed.

Enhanced Environmental Review: NEPA/Mini-NEPA. Before any discretionary federal agency action, the agency must consider how to comply with the National Environmental Policy Act (“NEPA”). If the intended action is found to be a major action with significant environmental impacts, then an Environmental Impact Statement is required. The NEPA process is most frequently triggered when a project is located on federal or tribal land or involves significant federal resources. NEPA does not apply to actions by state agencies. However, approximately 20 states have implemented “mini-NEPA” statutes that create similar state agency responsibilities, including Minnesota and California. For example, California has the California Environmental Quality Act (“CEQA”), which is triggered by discretionary approvals by governmental agencies, including the local agencies that have an approval related to that project. Thus any permit approvals including use permits, waste discharge permits, and the like are potentially subject to CEQA. Under CEQA, the lead agency examines the application and drafts an initial study to identify potential significant impacts. If the impacts can be mitigated, a shorter Negative Declaration can be drafted. If there is potential for significant environmental impacts, a more comprehensive Environmental Impact Report (“EIR”) is required. One of the more difficult issues addressed in an EIR may include the cumulative impacts of the project. Other difficult issues include alternatives, and whether the agency can conclude that the benefits of the project outweigh the potential for a determination of environmental impacts.

C. Air Permitting.

Permitting Challenges. One of the most challenging portions of permitting for a biomass plant is obtaining all the necessary air permits. The degree of complexity usually depends on two factors: (1) whether the proposed site is located in an area which is in attainment for all ambient air quality standards, and (2) whether the

emissions of any individual regulated air pollutant will exceed the permitting threshold. The first of these factors determines whether the source is subject to lower permitting thresholds and heightened emissions control requirements, and the local nonattainment new source review program. The second of these factors affects whether, even if the source is proposed to be located in an area in attainment with all ambient air quality standards, the source is subject to major new source review or a Prevention of Significant Deterioration, (“PSD”) program. While local air permitting requirements can vary, locating a biomass facility in an area attaining all ambient air quality standards and designing the plant so that the maximum possible emissions (called “potential to emit”) is under the permitting thresholds typically ensures simpler air permitting. As an example, major source thresholds in the Central Valley of California have been lowered due to a recent redesignation of the attachment status, to levels of “Extreme Non-Attainment.” Plants at these levels are subject to Best Available Control Technology (“BACT”) and offsets. Additionally the interaction of the mini-NEPA statutes must also be taken into account.

Control Technology Requirements. Most new biomass-fired boilers will be subject to federal or state New Source Performance Standards. For boilers combusting primarily biomass, the applicable requirements are typically limited to particulate standards, including opacity limits and associated testing and reporting requirements. Biomass-fired boilers will usually be required to install and operate a continuous opacity monitor and file semi-annual reports about the device. If it is possible to combust fossil fuel in addition to biomass, it may be necessary to obtain a limit on the maximum allowable fossil fuel in order to avoid limits and associated monitoring for other pollutants (*e.g.*, oxides of nitrogen or “NO_x”).

Many biomass facilities are subject to requirements to install BACT either because they trigger major new source review or because of local requirements. In most cases, the control device needed to ensure compliance with the New Source Performance Standards will satisfy the requirement for BACT. If BACT is triggered for NO_x, then the source will typically be required to install an ammonia or urea injection system known as selective noncatalytic reduction. Alternate NO_x control technologies suitable for biomass-fired boilers are under development, but are generally considered unproven in practice for a variety of system designs. Arguments over NO_x and/or carbon monoxide controls are an increasing feature where local opposition to the project develops.

Greenhouse Gases. An increasingly frequent point of discussion is how biomass-fired power plants are regulated under current, proposed, and even purely conjectural greenhouse gas (“GHG”) rules and laws. A frequent benefit of biomass plants is that not only do they combust biomass more cleanly than previous means of combusting the material (*e.g.*, open burning) and displace fossil fuel, but they also result in reduced methane emissions associated with allowing the biomass to decompose. Extensive research has been conducted about the GHG benefits of combusting biomass, but this topic can still be a focal point among project opponents that are not well versed in the scientific literature.

EPA has established GHG reporting rules, but these do not apply to the typical biomass-fired power plant that burns exclusively or primarily biomass. However, if the biomass-fired power plant is part of a larger source that has 25,000 metric tons or more of GHGs (CO₂-equivalent), then the biomass-fired power plant will be subject to reporting along with the rest of the facility. Similarly, if the biomass-fired power plant cofires fossil fuel with the biomass, it may trigger GHG reporting. The volume of GHGs may also impact the extent of environmental review by a state’s mini-NEPA statutes.

As this book goes to press, there is considerable debate as to whether GHG emissions will trigger major new source review under the Clean Air Act and, if so, what the threshold will be for triggering review. EPA has proposed a rule that would require new or modified sources with 25,000 short tons (CO₂-equivalent) or more of GHG emissions to undergo major new source review for GHGs. The agency has also proposed that new and existing sources with this level of emissions must obtain Title V federal operating permits. Unlike the GHG reporting rules, there is no distinction in the proposed rule between biomass derived emissions and fossil fuel derived emissions. If this is not changed in the final rule, many biomass plants could find that they trigger major new source review based on their GHG emissions.

At the time of publication, Congress is working on developing a national GHG cap and trade program. Although the terms of any such program are in a constant state of flux, a theme appears to be to regulate biomass combustion emissions under such a program unless the emissions result from the combustion of “renewable biomass.” Definitions of what constitutes “renewable biomass” tend to stretch into multiple pages of statutory text. However, a consistent feature is to press forest management agendas through what can be considered “renewable biomass” and, therefore, avoid the crippling additional operating cost that could result from compliance with a GHG cap and trade program. GHGs impact NEPA and mini-NEPA statutes by requiring various mitigation depending upon the amount emitted.

Initial Requirement to Obtain a Construction Permit. Federal law categorizes every area of the country according to the levels of primary air pollutants (referred to as “criteria pollutants”) in that area’s air. EPA identifies those areas of the country that do not meet the ambient air quality standards for a particular criteria pollutant as “nonattainment areas.” Nonattainment designations are pollutant-specific; consequently, an area might be “nonattainment” for ozone, one of the criteria pollutants, but still be considered “attainment” for particulate, sulfur dioxide, carbon monoxide, and/or lead. Locating a plant in a nonattainment area typically increases the regulatory burden and permitting time because permitting thresholds are lower in nonattainment areas and the requirements more stringent. Areas other than nonattainment areas are considered attainment areas or unclassifiable areas. Because facilities slated for construction in attainment areas are treated the same as sources planning to locate in unclassifiable areas, both area types are regarded as attainment areas.

For the purpose of air permitting, facilities are deemed “sources” because each facility is a source of air pollutants. Sources located in an attainment area are potentially subject to one of two types of permitting programs. Smaller sources of air pollutants are typically permitted under local permitting programs referred to as “minor new source review.” The trigger thresholds for these programs vary considerably, as do the requirements for emissions controls, once triggered. Typically, but not always, the applicability of these programs depends on the facility’s potential to emit. Potential to emit is determined for each pollutant based on the assumption that the facility will operate 24 hours a day, 365 days a year. As part of the permit, limitations can usually be assumed to constrain operations below a given threshold, thereby decreasing the potential to emit. For example, if a developer designs a plant to operate 340 days per year, a permit condition could specify that limit on hours/days of operation. If this limit is sufficient to drop the facility below an applicable threshold, taking on this “synthetic minor” limit may be an appropriate business decision. Often, facilities will take limits on production (for example, a biomass plant will limit its production to 90 mg/y) to avoid certain permitting responsibilities. It is unusual for a facility to avoid all air permitting requirements by taking on limits, but it is not uncommon for facilities to take on limits to avoid major new source review.

Sources located in attainment areas are subject to “major new source review” if their potential to emit (after taking into account federally enforceable limitations) is greater than certain thresholds. In most parts of the country, the threshold for triggering major new source review was the emission of 100 tons per year of any regulated air pollutant if the facility is identified as within a federally designated source category, or 250 tons per year if the facility is not in one of the federally designated source categories.

Sources subject to Prevention of Significant Determination (“PSD”) must comply with specific requirements. The most significant of these are (1) the requirement to perform modeling to demonstrate compliance with ambient air quality standards and air quality increment requirements; (2) the requirement, unless exempted, to perform a year of preconstruction monitoring; and (3) the requirement to install BACT. Many, but not all, state minor new source review programs require one or more of these elements even if the source does not trigger PSD. However, the stringency with which these requirements are applied and the degree of public scrutiny and involvement is often much greater when a source is subject to PSD. In addition, in many states EPA is either the lead or a copermitting authority when PSD is triggered. This federal scrutiny may also increase the time to permit a source.

Sources slated for construction and operation in nonattainment areas that have the potential to emit more than the threshold levels of the nonattainment pollutant or pollutants are subject to the most stringent air permitting requirements. Most significantly, facilities triggering nonattainment new source review must provide offsets (emission reduction credits) at least equal to their total emissions. In some areas, sources triggering nonattainment new source review must provide emission reduction credits equal to as much as 150 percent of their potential to emit. This increases cost and may render projects infeasible because emission reduction credits simply are not available. In addition, sources triggering nonattainment new source review must use controls that are considered to result in the “lowest achievable emission rate.” This level of control, referred to as “LAER” (pronounced “layer”), requires the highest level of control achieved anywhere in the relevant industry or in similar industries in which the technology is considered transferable. Most importantly, cost is not considered when establishing LAER (in marked contrast to BACT, for which economic, energy, and environmental impacts are considered). The requirement for emission reduction credits and LAER often are significant incentives to maintain facilities at the lowest emission levels possible—to stay below nonattainment new source review thresholds.

Whether a source is being permitted under nonattainment new source review, PSD, or local minor new source review, it is important to understand that these are preconstruction permitting programs. Facility construction is not authorized to proceed until a construction permit is issued under the applicable air-permitting regime. EPA has authorized land clearing and grading, but in guidance documents the agency has suggested that if an air permit has not been obtained, any work beyond clearing and grading is illegal. Some local permitting authorities have allowed certain work beyond clearing and grading in advance of receipt of a permit. However, a developer should consult with an attorney specifically experienced in air permitting before assuming that any work beyond land clearing will be tolerated in advance of receiving the permit.

Federal Operating Permits (Title V). In addition to new source review, other air permitting requirements may apply to plants. In many states, the new source review permit is merely a construction permit—that is, the permit authorizes construction of a facility as specifically identified in the permit. The source is required to

obtain an operating permit in addition to the construction permit, or convert the construction permit into an operating permit after demonstrating compliance with all requirements. In addition, if the plant has the potential to emit 250 tons per year or more of any regulated air pollutant, 10 tons per year of any individual hazardous air pollutant, or 25 tons per year or more of aggregate hazardous air pollutants, it must obtain a federal operating permit, commonly referred to as a “Title V permit.” These thresholds may be lower in certain areas, but other criteria may trigger the need for a Title V permit. Although most states do not require an application for a Title V permit until the facility has operated for a year, some states require that a Title V application be submitted concurrent with a new source review permit application.

New Source Performance Standards. Federal law imposes specific standards called New Source Performance Standards (“NSPS”) on certain types of new, modified, or reconstructed equipment. The NSPS include substantive standards (for example, particulate, NO_x, or SO₂ limits) and extensive notification, testing, monitoring, record keeping, and reporting requirements.

The standards are federal but have been adopted by most local permitting authorities, resulting in confusing overlapping jurisdiction. EPA has primary authority to issue notices and authorize exceptions to NSPS requirements.

Hazardous and Toxic Air Pollutants. Under federal law, plants with the potential to emit 10 tons per year or more of any individual hazardous air pollutant or 25 tons per year or more of aggregate hazardous air pollutants are considered “major sources” of hazardous air pollutants. Consequently, the source must obtain a Title V federal operating permit. Of potentially much greater consequence, the source must also comply with the hazardous air pollutant general provisions, which, in part, impose notice and preconstruction review requirements, and the source must use maximum available control technology (“MACT”) to minimize hazardous air pollutant emissions. However, as testing has become more sophisticated, the industry has learned that several hazardous air pollutants (including methanol) are potentially emitted in significant quantities from previously unsuspected sources. Therefore, careful consideration early in the development process of the applicability of the MACT requirements is critical. Methanol can be generated by decomposing feedstocks and other biomass elements.

Many local permitting authorities have air toxins programs that exceed the federal hazardous air pollutant program with respect to the number of pollutants covered and the preconstruction modeling and assessment required. State and federal interest in the impact of air toxins has increased substantially in recent years.

Odor. A frequent concern raised by residents living near a proposed facility is odor. Virtually all areas have rules prohibiting a facility from causing a nuisance. Even if such rules are not on the books, a nuisance lawsuit alleging the facility is unreasonably interfering with the neighbors’ right to enjoy their lives free of excessive odors is always a possibility. The public and permitting agencies frequently think the standard is no odor. However, in most jurisdictions, the true legal requirement is that the facility not create an unreasonable amount or intensity of odor. Local regulations often require the development of an odor abatement plan—particularly if complaints have been filed—and doing so may provide some level of protection against nuisance suits. Although all 50 states have some variation of a “right-to-farm” statute protecting agricultural operations from odor lawsuits, these statutes are typically construed narrowly. Local precedent must be consulted to

determine whether these statutes could provide relief for any portion of a biomass operation. As residential development creeps closer to industrial and agricultural development, increased capital is being applied to minimize the likelihood of odors. Nonetheless, any industrial operation still retains some potential for odors, so this aspect must be considered in siting and permitting a new or expanded facility.

The following is a nonexclusive list of additional potential “environmental” permits that may be required:

- Spill prevention control and countermeasures plan
- Plan for chemical storage areas, inventories for the handling of hazardous chemicals, and state and federal requirements
- OSHA and/or Material Safety Data Sheet recordkeeping (records of material safety data)
- Above- or below-ground storage tank permits, possibly including secondary containment or leak detection
- OSHA boiler license
- Risk management prevention plan

Chapter Five
THE LAW OF BIOMASS
—Setting Up Shop: Design, Engineering, and
Construction of Biomass Projects—
Karl F. Oles, David T. Quinby

This chapter provides an overview of the contractual structures that are typically applied to the design and construction of a biomass energy generation facility. While each project is different, there are common issues that must be addressed to promote project success, including the allocation of expected project risks, the scheduling and coordination of work by multiple designers and contractors, and arrangements for financing and insurance. This chapter provides guidance about how to address those key issues. This overview is written from the perspective of a biomass project developer, but it should interest design and engineering, construction, and procurement contractors as well. As with any complex negotiated transaction, there is potential value to be gained or lost by all parties, and often the potential exists for using creative legal strategies to increase value for those on both sides of the table.

I. Components of Project Agreements. Certain component agreements are critical to the construction and development of a biomass project, including agreements for:

- design and engineering;
- procurement of receiving and storage equipment; processing equipment (*e.g.*, chippers for woody biomass); boilers and controls; pumps, piping, and related components; and materials to construct “balance-of-plant” facilities, storage tanks, foundations, roads, and maintenance facilities;
- performance guarantees, warranties, and insurance arrangements; and
- operation and maintenance of the completed facility.

Engineering, procurement, and construction tasks are frequently combined in a single agreement referred to as an “EPC agreement.” The EPC agreement may provide for, or anticipate the provision of, other services such as warranty services or operations and maintenance services for the completed facility. Sometimes all the design and engineering, procurement, and construction services are addressed in a single agreement (a “full-wrap agreement”) under which a single general contractor is responsible for the whole project, but it is more common to have separate agreements for different areas of the work, with a specialty firm engaged to provide proprietary process equipment and another contractor engaged for the balance-of-plant construction work. Warranties, insurance, and other matters may also be addressed in a single agreement or in separate agreements, depending on contractual structure.

II. Preliminary Design and Engineering Services. Biomass facilities require design and engineering expertise in heat generation in general and in the properties of specific biomass resources in particular. Relatively few firms design, engineer, and manufacture specialty process equipment for biomass projects, as this technology is still being developed. While most biomass facilities burn the biomass directly, other processes (gasification, pyrolysis, and anaerobic digestion) can be used to generate combustible materials from the biomass stock. The designer must consider the properties of the biomass materials to be used and the best way to extract the

maximum useful energy. The designer will determine the types of equipment and facilities that will be needed. Thoughtful design becomes even more critical if the project site contains existing facilities that are to be incorporated into the new plant, or if the biomass facility will be linked to another industrial process that has specific requirements for heat or power input.

III. EPC Contractual Structure. No single contractual structure will apply to all projects. In many cases, the project developer retains one contractor to design and provide the specialized biomass processing and combustion equipment and a second contractor to undertake the design and engineering of the balance of plant, including electrical generation equipment or industrial process equipment. The balance-of-plant contractor may be given responsibility for the commissioning, start-up, and performance testing of the entire facility and may provide warranty services. In this arrangement, the work of the two contractors needs to be closely coordinated both in space and in time, clearly setting forth the division of responsibilities. This becomes particularly important should disputes arise relative to performance guarantees and warranty obligations. The balance-of-plant contractor will need information about the specialty contractor's process equipment to design, construct, and lay out the entire plant in a way that economically connects the various parts to power, controls and data systems, and other facilities. The balance-of-plant contractor will also need a delivery schedule for the process equipment to formulate a schedule for preparing foundations and erecting plant components.

The project developer and the specialty contractor may enter into a supply agreement where the contractor agrees to engineer, procure, and construct biomass process equipment components and deliver them to the site on a definite schedule and to provide expert assistance in commissioning and testing that equipment after it is set in place and connected to the balance-of-plant facilities. The specialty contractor also typically provides a performance guarantee that must be carefully negotiated and measured in terms of inputs (biomass material characteristics) and outputs.

The project developer then enters into a balance-of-plant agreement with a general contractor who agrees to design and construct the other necessary facilities for the project, including foundations, roads, loading and storage facilities, and electrical and control systems for the entire biomass facility.

Both sets of agreements will attempt to coordinate the work of the two contractors while avoiding interference, duplication, or omission between the scopes of work of the specialty contractor and the balance-of-plant contractor. Collectively, the agreements should result in a fully constructed, integrated, and operational project.

In drafting contracts for process equipment and the balance-of-plant construction, the developer must focus on the scope of work, measures of completion, respective warranty obligations, limitations of liability, and related insurance issues. These issues are discussed in the sections that follow.

IV. Scope of Work. The parties should place great emphasis on the description of the scope of work set forth in the agreements. Generally, whatever is not included in the contractors' scopes of work remains the project developer's responsibility. The scopes of work should describe, in detail, the design, engineering, and construction obligations of the contractors, and any obligations relating to the commissioning, start-up, and performance testing of the biomass facility. The contractors' scopes of work should address design, procurement, delivery, installation, control systems, completion, and warranty work. As with other aspects of such an agreement, the scope-of-work provisions will probably be heavily negotiated.

V. Completion and Start-Up Obligations. Details of how, when, and by whom the plant is to be commissioned are usually set forth in the scope-of-work provisions of the relevant agreements. Because of the specialty contractor's in-depth knowledge of the work and its role in plant design, that contractor is typically responsible for commissioning the equipment that it supplies. However, this work may be undertaken by the project developer (with assistance from the specialty contractor) or by the balance-of-plant contractor. Attention must be given in the agreements to defining the stages of completion, such as the actual delivery of equipment to the project site, the installation of the equipment, and the commissioning, start-up, and performance testing of the plant. Each of these stages plays an important role in the coordinated development of the project. As these progress milestones are established, completion is generally documented by the contractors' certifications of, for example, interim completion, substantial mechanical completion, final mechanical completion, and final sign-off. Each such certification is considered an incremental measure that the project must satisfy to progress to the next measure. As with other supply- and construction-related agreements, progress payments by the project developer to the contractors (as set forth in the relevant agreements) are normally based, in part, on the milestones described above. To the extent there is a financing party involved, a third-party, independent engineer will likely be a part of this process, providing input and oversight on behalf of the financing party.

VI. Performance Guarantees and Warranty Obligations. Performance guarantees and warranty-related obligations are likely to be an issue of substantial negotiation between parties to these types of agreements. The nature and scope of a contractor's obligations will, however, depend on what services, materials, and equipment the contractor is contracted to provide. A contractor's obligations 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), utilities consumption rate and output guarantees, and related matters.

Key issues to consider with respect to warranties include (1) the period or term of a particular warranty and whether the term can be extended, (2) the definition of a defect, (3) limitations on a warranty due to third-party services (such as operation and maintenance services), (4) the remedial measures a contractor must or may take to cure any defect, and (5) measures the facility operator must take to trigger the warranty obligation (such as notice and providing opportunities for inspection and repair). Additionally, a project developer may want third-party contractor or subcontractor warranties applicable to parts or components used in the plant to be "passed through" the contractor for the project developer's direct benefit.

VII. Limitation of Liability. As with other construction and procurement agreements, contractors will seek to limit their liability to the project developer and may request a waiver of consequential, indirect, incidental, and special damages. Those clauses must be negotiated carefully to result in a reasonable allocation of risk to those parties best able to avoid risk and to ensure that excluded categories of damages are clearly defined (they may not be clearly established in the law). A contractor will often seek to have its liability for damages limited to a stated percentage of the value of the relevant agreement. The parties may carve out particular issues for different treatment and may specify the contractor's maximum aggregate liability. Liability risk needs to be coordinated with liability insurance resources.

VIII. Project Financing. The high capital costs of a biomass project mean that the project likely will require some form of substantial debt financing or joint venture financing to support the design, engineering,

procurement, construction, and initial operations. Before committing funds to a project, financial institutions and potential investors will expect to review and comment on a project's design and engineering, procurement, process engineering, licenses, construction agreements, operations and maintenance agreements, and warranties. In particular, lenders and investors will expect to be able to step into the shoes of the project developer in the event the project developer (as the borrower) is in default under its financing arrangements, and are focused on provisions specifying the extent and nature of available damages in the event of a contractor's subpar performance.

Because of the involvement of investors and lenders, and to avoid issues arising from any potential inconsistencies, the project developer should be prepared to present a consistent and complete set of project agreements to lenders and investors and should be prepared for the possibility that lenders and investors may require substantial changes in the negotiated documents, particularly as they relate to warranty obligations, performance guarantees, and limitations on liabilities. These issues become even more significant when a project is utilizing a new technology or the facility is scaling up to a plant size not previously constructed.

IX. Performance and Payment Guarantee Issues. A project developer may want its contractors to ensure, for the project developer's benefit, (1) procurement of performance and payment guarantees or bonds to ensure timely performance of contractors under the relevant agreements and (2) that no liens or undesired security interests are lodged against the project in relation to unpaid subcontractors. These guarantees and bonds are described below.

A. Performance Guarantee or Bond. A performance guarantee or bond is usually issued by a parent company or other creditworthy entity, such as a bonding company, selected or approved by the project developer. Under the guarantee or bond, an agreed-on sum is available to satisfy the project developer's damages arising out of the contractor's failure to perform as specified in the relevant agreement. The bonding company charges a fee and retains the right to seek reimbursement from the contractor or contractor's guarantor. If the contractor defaults or cannot complete the project, the project developer may call on the guarantor or bonding company to perform the contractor's obligation (for example, the surety may pay another contractor to complete the project). The project developer will want to reserve all rights against the defaulting contractor if the performance guarantee or bond does not fully cover the project developer's costs of completing the project or any damages the project developer must pay to a third party (such as penalties for failure to provide power from the delayed plant).

B. Payment Guarantee or Bond. A payment guarantee or bond provides assurance that upon the contractor's default, employees and subcontractors will be paid for work performed so that no liens or other security interests will attach to the project developer's property or to the project. A lien claim, normally filed against the project developer's property, may be bonded over so that the lien attaches to the bond rather than to the property. Lenders, upon their review of the agreements, may demand or require such payment guarantees or bonds to enhance the lenders' security interests in the project, particularly if the commencement of work (which may give rise to lien rights) predates the lenders' recorded interests in the property.

The project developer or the lenders may require other security from contractors such as standby letters of credit and an insurance policy listing the developer and lenders as additional insureds. The contractors will demand ample opportunity to cure any default or delay and will seek to limit the project developer's ability to call on its

performance or payment bonds or other security. Contractors may demand some form of reciprocal security issued by the project developer or its parent company, such as a parent guarantee, particularly if the project developer's only substantial asset is the project itself.

X. Liens and Releases Issues. When the project developer makes periodic payments to contractors, the developer should obtain a lien release from each contractor and major subcontractor. A lien release will help protect the project developer from liens being filed on the project by subcontractors who have not been paid. Liens are undesirable because (among other reasons), once filed, they can delay or interfere with the project's financing or sale. Worse still, if a lien claimant is successful, a lien could be used to force a foreclosure sale of the project property. The language of the lien release is important, and often release forms are included in the contract documents.

XI. Insurance and Indemnity Issues. A project developer should obtain appropriate indemnities against and insurance coverage from the various parties with whom it contracts and should require those parties to obtain similar protections from their subcontractors and material suppliers for the benefit of the project developer. Relevant indemnities include indemnities against personal injury, death, and property damage claims; contractor and subcontractor lien indemnities; an indemnity for taxes (other than those attributable to the developer); an indemnity for violation of applicable laws (including environmental 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 (liability insurance relating to design and engineering services); and builder's all-risk (property insurance for the project under construction). Policies should name the developer and its financing party (if any) as additional insureds and contain appropriate waivers of subrogation. Appropriate policy limits will vary with respect to the nature of the work being performed by the insured and the scope of the project. It is advisable for project developers to consult with an insurance or a risk management specialist to ensure that appropriate types and levels of coverage are obtained.

Chapter Six
THE LAW OF BIOMASS
—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 March 30, 2010. 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.

FEDERAL INCOME TAX ISSUES

I. The Production Tax Credit. Section 45 of the Internal Revenue Code of 1986, as amended (the “Code”), provides a credit against federal income tax for electricity produced from certain renewable resources, including certain open- and closed-loop biomass. This credit is known as the production tax credit (the “PTC”).

A. Requirements for Claiming the Credit. The PTC for open-loop and closed-loop biomass facilities applies to electricity that is (1) produced at a qualified facility during the 10-year period that begins on the date the facility was originally placed in service and (2) sold to an unrelated person during the taxable year. Each of the following requirements must be satisfied for a taxpayer to claim the PTC:

1. Produced by the Taxpayer. The electricity must be produced by the taxpayer seeking to claim the PTC. If more than one person has an ownership interest in a facility, production from the facility is allocated among the owners in proportion to their respective ownership interests in gross sales from the facility. A partnership (including a limited liability company (“LLC”) that is treated as a partnership) is treated as one person for purposes of this rule, which means that individual partners are not treated as owning separate, undivided portions of a facility that is owned by a partnership.

2. Qualified Energy Resources. The electricity must be produced from qualified open-loop or closed-loop biomass. Open-loop biomass includes (a) agricultural livestock waste nutrients and (b) solid, nonhazardous, cellulosic waste material, or any lignin material derived from (i) mill and harvesting residues, precommercial thinnings, slash, and brush; (ii) certain solid wood waste materials; and (iii) agriculture sources, including orchard tree crops, vineyard, grain, legumes, sugar, and other crop byproducts or residues. Open-loop biomass does not include closed-loop biomass or biomass co-fired with more fossil fuel than is required for startup and flame stabilization. Closed-loop biomass is defined as any organic material from a plant that is planted exclusively to be used at a qualified facility to produce electricity.

3. Qualified Facility. The electricity must be produced by a biomass facility that is located in the United States and is owned (or, in the case of certain facilities, leased or operated) by the taxpayer claiming the PTC. A closed-loop biomass facility generally must be placed in service after December 31, 1992 and before January 1, 2014. An open-loop biomass facility that uses agricultural livestock waste nutrients generally must be placed in service after October 22, 2004 and before January 1, 2014 and must have a nameplate

capacity rating of at least 150 kilowatts. An open-loop biomass facility that does not use agricultural livestock waste nutrients generally must be placed in service before January 1, 2014. A qualified facility generally includes a new unit placed in service after October 3, 2008 in connection with a qualified open-loop or closed-loop facility, but only to the extent of the increased amount of electricity produced at the facility by reason of the new unit. A facility generally is considered to be “placed in service” for purposes of these rules when the facility is placed in a condition or state of readiness and is available to produce electricity.

4. **Sold by the Taxpayer.** The electricity must be sold by the taxpayer claiming the PTC to an unrelated person during the taxable year.

5. **No Advance Approval Required.** There is no advance approval requirement for claiming the PTC. A taxpayer that is entitled to the credit simply reports it on the appropriate form attached to the taxpayer’s federal income tax return.

B. **Calculation of the PTC.** The PTC for closed-loop biomass for any taxable year during the credit period generally is equal to 1.5 cents, adjusted for inflation, multiplied by the number of qualified kilowatt hours of electricity produced and sold by the taxpayer during the year. The PTC for open-loop biomass generally is half of the PTC available for closed-loop biomass. For electricity produced and sold during 2009, the inflation-adjusted PTC amounts were 2.1 cents per kilowatt hour for closed-loop biomass and 1.1 cents per kilowatt hour for open-loop biomass. The inflation-adjusted amounts for 2010 have not yet been released.

C. **Reduction for Government Financing.** The amount of the PTC is reduced for facilities financed in whole or in part with certain government grants, proceeds of tax-exempt bonds, subsidized energy financing (financing provided under a federal, state, or local program designed to provide subsidized financing for energy conservation projects), or other tax credits. The IRS has ruled that certain state tax credits do not reduce the PTC.

D. **Nonrefundable Credit.** The PTC is a “nonrefundable” credit. If a taxpayer entitled to the PTC 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 because of any excess credit. Any unused portion of the credit generally may first be carried back one tax year and then be carried forward 20 tax years from the year the credit arose.

E. **Sunset Date.** To qualify for the PTC, a biomass facility must be originally placed in service before January 1, 2014. Proposals to extend PTC sunset dates are a matter of frequent discussion, and it is possible that the sunset date could be extended beyond January 1, 2014 by future legislation.

II. **The Investment Tax Credit.** Sections 46 and 48 of the Code allow the owner of a qualified open-loop or closed-loop biomass facility that is placed in service on or after January 1, 2009 and before January 1, 2014 to elect to claim the investment tax credit (the “ITC”) in lieu of the PTC. 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 biomass facility, whether open-loop or closed-loop, is 30 percent of the tax basis (generally the cost) of the qualifying property.

A. Requirements for Claiming the ITC. The ITC applies only to “energy property,” which is defined in the case of a biomass facility to include only property that meets the following requirements:

1. **Biomass Equipment.** The property must be equipment that is used to produce electricity from open-loop or closed-loop biomass. The property must be (1) tangible personal property or (2) other tangible property (not including a building or its structural components) that is an integral part of the biomass facility.

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

3. **Qualified Facility.** The property must be part of a qualified facility that is located in the United States, owned by the taxpayer, and originally placed in service on or after January 1, 2009 and before January 1, 2014.

4. **No PTC Allowed.** The property cannot be part of a facility for which the PTC has been allowed.

5. **Irrevocable Election.** The owner of the property must make an irrevocable election to claim the ITC rather than the PTC.

B. 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.

C. 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 biomass facility with respect to which the ITC is claimed generally will be 85 percent of the cost of those components.

D. 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.

E. No Cutback for Government Financing. The ITC, unlike the PTC, generally is not reduced with respect to facilities that are financed in whole or in part with the proceeds of tax-exempt bonds, subsidized energy financing, or other forms of government-supported financing.

F. Nonrefundable Credit. The ITC, like the PTC, 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 first be carried back one tax year and then be carried forward 20 tax years from the year the credit arose.

G. Sunset Date. To qualify for the ITC, an open-loop or a closed-loop biomass facility must be placed in service before January 1, 2014.

III. U.S. Treasury Department Grants. The American Recovery and Reinvestment Act of 2009 allows the owner of a qualified biomass facility that is eligible for the ITC (including by reason of an election to claim the ITC rather than the PTC) to elect to receive a grant from the U.S. Treasury Department in lieu of claiming the ITC or the PTC 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.

A. Qualification for Grant. To qualify for a grant, a biomass 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, 2014.

B. Disqualified Persons. A grant may not be paid with respect to a project if certain persons own an equity or profit interest in the project, either directly or indirectly, through a pass-through entity, such as a partnership. Disqualified persons include, among others, federal, state, and local governments; certain tax-exempt organizations; cooperative electric companies; Indian tribal governments; and certain foreign persons.

C. 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.

D. Excluded from Income. A grant generally is not included in the taxable income of the recipient for federal tax purposes. An exception applies to certain lease transactions. Treatment of the grant for state income tax purposes varies from state to state.

E. 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. An exception applies to certain lease transactions.

F. 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.

G. No ITC or PTC Allowed. No ITC or PTC may be claimed with respect to property for which a grant has been claimed.

H. 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.

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

IV. Depreciation. In addition to tax credits or grant payments, biomass facilities also can generate significant tax losses that can be valuable to owners with other sources of taxable income that can be offset by the losses.

A. MACRS Depreciation. Qualifying components of biomass facilities are eligible for greatly accelerated depreciation deductions under the modified accelerated cost recovery system (“MACRS”).

B. 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. Proposals to extend the sunset date have been discussed, and it is possible that the sunset date could be extended beyond 2009.

V. 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 can use 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 biomass facility. The partnership could then operate the facility, and, within certain limits, the tax credits and losses could be allocated to the partner that can use 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. This second alternative, known as a “sale-leaseback,” is available with respect to the ITC and the grant but generally is not available with respect to the PTC. 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 biomass 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 PTC, 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.

STATE AND LOCAL TAX ISSUES

In addition to federal income tax issues, construction and operation of biomass 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. Developers and investors should be careful to obtain very current information about state tax in general, and state tax incentives in particular. The economic downturn has caused many states to revisit tax incentives previously offered to businesses, including renewable energy businesses. States are generally narrowing their incentives, either by interpreting existing law narrowly or by legislative change, sometimes with retroactive effect.

I. 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.

A. Nexus, Business Structure, and Apportionment. Siting a biomass project in a state will generally create “nexus” with the state and will generally allow the state to tax the income of the company that owns or operates the project. Less substantial activities, such as consulting, may create nexus with a state as well.

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), 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.

B. Income Tax Incentives. Some income tax states offer incentives, such as Oregon’s per-ton credit for the production or collection of biomass used for biofuel, in order to promote the development of biomass and other alternative energy projects. It is important to understand the nature of each incentive, as there is considerable variation among the states. Also, as noted above, some state incentives may reduce the amount of the federal incentives available for the project.

For example, Oregon has adopted a business energy tax credit (the “BETC”). The BETC program allows an Oregon taxpayer that owns and operates a qualifying renewable energy facility, including a biomass facility, to claim a credit against Oregon income tax to offset the eligible costs of construction of the project. Legislation passed in 2007 extended the BETC to power projects that generate electricity from biomass. A separate 2007 bill 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. Legislation and administrative rules adopted in late 2009 and early 2010 impose statewide caps on the BETC for renewable energy projects, including biomass projects, and give broad discretion to the Oregon Department of Energy to attach conditions and restrictions on individual projects. In addition, a recent

increase in the discounted price that must be paid for the BETC likely will make it more difficult to sell the BETC.

II. Sales and Use Taxes. Nearly all 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.

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

B. 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.

C. Sales Tax Incentives. Some states have adopted exemptions for the purchase of machinery and equipment used to produce electricity from certain renewable resources. For instance, Washington has adopted a sales and use tax incentive for certain alternative energy generation equipment, including machinery and equipment used in generating electricity from biomass. 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. However, the Washington legislature, like many state legislatures, is considering substantial changes to, and limitations on, this sales tax incentive and also is considering substantial changes to the tax system as a whole.

III. Property Tax. Virtually all states impose a 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.

A. "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.

B. Valuation. States generally accept the three traditional valuation methods for 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.

C. 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.

D. 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. This issue may arise during the siting process. It is best to address this issue as part of financial modeling.

E. Property Tax Incentives. As part of due diligence in constructing or acquiring a biomass 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. For example, 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.

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

A. 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.

B. Other State and Local Excise Taxes. Other states and localities may impose other kinds of excise taxes. For example, 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. All potentially applicable taxes, including state and local excise taxes, should be carefully analyzed in determining the costs and benefits of operating a biomass facility.

Chapter Seven

THE LAW OF BIOMASS

—Intellectual Property Issues, Technology Issues; Licensing Biomass Technology—

I. Legal Rights. Intellectual property rights generally include patents, trade secrets, copyrights, and trademarks. In the development of biomass energy, the two most important legal rights for most companies will be patents and trade secrets.

II. Patents. A U.S. patent gives the patent owner the right to exclude others from making, using, selling, or importing products in the U.S. that would infringe the patent for a term beginning on grant of the patent and ending 20 years from the date the patent application was first filed. The patent owner's right to exclude others from using the invention applies even if a second owner independently develops the same invention. In other words, ignorance of the patent is no defense. To be patentable, an invention must be new, useful, and nonobvious in view of the prior art. It may be a machine, an article of manufacture, a process, or a composition of matter. Laws of nature and mathematical formulas per se are not patentable.

Patent applications are made in writing and in the name of the inventors, signed by the inventors, and filed with the U.S. Patent and Trademark Office. (The owner's rights under a U.S. patent apply only in the U.S., but similar patent protection can be obtained in all industrialized nations if the applicable filing and timing requirements are met.) The application must include a specification that describes how the invention is made and used, and the best mode of realizing the invention. The application must also include the claims, which describe in particular terms the unique aspects of the invention for which legal protection is sought. The claims and specifications generally are published 18 months after the first filing date. However, in the U.S., an applicant can avoid publication if it agrees not to file the application anywhere outside the U.S., and requests "nonpublication" when the application is filed. Either way, the specification, including the final claims, will be published in the issued patent. It usually takes approximately 18 to 36 months or longer from filing the patent application to issuance of the patent. Patent law is technical, and to maximize the scope and the value of a patent, patent counsel should normally be retained for advice and to write and prosecute the application.

A patent owner can sue a patent infringer for damages, and in some circumstances a prevailing owner can also obtain a court order that will prevent the infringer from any further use of the invention. The patent owner can therefore prevent competitors from using the invention, or the patent owner may decide to license the patent to others in exchange for royalty payments.

Patent protection is potentially very powerful, but protection can be lost if filing and timing requirements are not met. Inventors and companies involved in technology development must be aware of these requirements. They should consult with patent counsel early on, especially before any public use or disclosure of the invention. Compliance procedures should be implemented at the start of any technology development project.

III. One-Year Bar. One of the more problematic requirements is the so-called "one-year bar." If the invention is described in a printed publication anywhere in the world, or if it is put on sale or used publicly (nonexperimental, or not subject to a nondisclosure agreement) in the U.S. more than one year before the U.S. patent application is filed, all patent rights are lost. Any publication, such as in an academic journal, Web site, or trade magazine, starts the one-year grace period. So does demonstrating or using the invention at a trade

show, or selling the invention or offering it for sale. Once any of these events takes place, the one-year clock is ticking, and patent counsel should be immediately consulted about starting the application process.

The timing requirements are even stricter if foreign patent protection is to be obtained. In most foreign countries, any publication or public disclosure of the invention anywhere in the world, before filing of the patent application, will cause loss of patent rights in that country. So if foreign patent protection is required, strict nondisclosure and nonpublic use procedures must be followed until the U.S. patent application is filed. In most industrialized countries, counterpart patent applications can claim the benefit of an earlier filing date of a U.S. patent application as the effective filing date for the foreign application, provided the foreign application is filed within one year of the U.S. filing date.

In most of the world, priority between multiple inventors of the same invention is based on the filing dates of their respective patent applications. The first to file wins. The U.S. patent system, however, uses a “first-to-invent” system rather than a “first-to-file” system. In the U.S., the inventor who first conceived of the invention and reduced the invention to practice with reasonable diligence has priority, even if someone else filed his or her patent application first.

IV. Record Keeping. In order to have evidence to back up a claim of having invented something at an earlier date, inventors must keep good records. The uncorroborated testimony of the inventor may not be enough, particularly if the inventor has a pecuniary interest in the outcome. Written records such as an engineer’s lab notebook should show all activities related to the invention. Entries should be periodically signed and dated by a witness (*e.g.*, weekly or monthly). Ideally, the witness should have some knowledge of the subject matter, and may be an employee of the same company.

V. Ownership of the Patent. Companies with employees researching or developing new technologies or products should take steps to ensure the company’s ownership of patentable inventions made by the employees. Under state law in most of the U.S., the employer owns the rights to inventions that are made by employees within the scope of their employment. When the employee owns the invention, in some cases the employer may have a nonexclusive “shop right” to use the invention, without compensation to the employee. This can occur when the invention was developed on the employer’s time or using the employer’s materials, facilities, or equipment, even though it was outside the employee’s regular duties. That is not usually a satisfactory outcome, because the company will not have full ownership of the invention.

To avoid uncertainty, a better solution is to address this issue with an invention agreement. The employer should require all new employees, as a condition to being hired, to sign an agreement assigning to the employer all inventions made by the employee during the course of employment. This type of agreement is extremely common in all industries that rely on technology development.

Some states have laws limiting the allowed scope of such agreements and requiring special notices to the employees, so state law should be checked. The invention agreement should also cover the employee’s confidentiality obligations and protection of the employer’s trade secrets. In addition, a similar type of agreement should be used for all independent contractors doing technology development work, to ensure that the company paying for the contractor’s work will own the patent for any invention developed by the contractor.

VI. Trade Secrets. Trade secrets are important in biomass energy development, whether or not patent protection is available. Unlike patents, trade secrets do not expire and can be continued indefinitely, so long as the information remains confidential. However, trade secrets do not prevent third parties from independently developing and using the same information.

A trade secret is any information, including a formula, method, program, device, or technique, that has economic value because it is not generally known and is not readily ascertainable by proper means, provided the owner takes reasonable measures to maintain its secrecy. For example, the mechanism of a product that can be reverse-engineered by taking it apart is not a trade secret. On the other hand, a manufacturing process that is a secret and that cannot be determined by studying the finished product would be a trade secret. Likewise, the source code for a computer program that is kept secret because the software is only distributed in object code form would be a trade secret. And even if a product is not protected by patent law and is subject to being reverse-engineered once it is on sale, trade secrecy during the development process will protect the company's head-start advantage of being the first to market with that particular product.

VII. Protective Procedures. To ensure that a company's trade secrets are protected, the following steps should be taken:

- Have all employees sign written confidentiality agreements as a condition of employment.
- Label all written documents, drawings, etc. that are considered confidential with a "confidential and proprietary" legend.
- Use physical and electronic security to restrict access to sensitive information to those with a need to know.
- Include the company's confidentiality policies in employee manuals.
- Require all third parties who may have access to the company's confidential information, such as vendors, consultants, and potential customers, to sign written nondisclosure agreements.
- When an employee leaves, appropriate steps should be taken, such as an exit interview, to collect company materials and to confirm the employee's obligations as to trade secrets.

VIII. Copyrights. Copyrights protect the expression of an author's ideas. They apply to materials such as articles, white papers, manuals, brochures, and computer software. Copyright protection is automatically available when a work is created, and no copyright notice or filing is required. Using a copyright notice, however, and registering the copyright with the U.S. Copyright Office, will provide additional remedies if enforcement becomes necessary. A notice at the beginning of the work, such as "© 2010 by John Smith, Inc.," will suffice.

IX. Problems with Independent Contractors. One potential trouble area is ownership of copyrights. Copyrightable work developed by employees in the course of employment will be owned by the employer, but copyrightable work developed by an independent contractor will be owned by the contractor unless the parties agree otherwise. If the contractor owns the work, the company that hired the contractor will have a license to use the work, but the scope of the license may not be clear. It may seem counterintuitive that the contractor will own the copyright when the company is paying the contractor to create the work, but that is the result under the copyright law unless the parties agree otherwise.

The bottom line: the company should have written agreements with all independent contractors, clearly stating that the company will own the copyrights in all works created under the contract. There should also be an employee invention agreement as described above to cover the employer's ownership of the copyright in all works created by the employee.

X. Trademarks. A trademark is an identifying word, picture, or symbol that a seller of goods uses to identify and distinguish its product from the products of other sellers. (Service marks protect services much as trademarks protect products.) Trademarks protect the seller's commercial interest in tying its products to itself. The products could be as complex as devices to convert biomass energy to electricity, or they could be as mundane as a loaf of bread.

Trademarks are protected both by the common law of the states and by federal statutory law. Federal protection is generated by using a mark and filing a trademark registration application with the U.S. Patent and Trademark Office, assuming the application is approved. However, trademark protection can also be derived from the common law, simply by using a trademark in commerce. A federal registration gives broader and stronger protection and is highly recommended.

If two sellers are attempting to use the same or a similar trademark for the same or similar goods, generally the first user will have priority. If there is a likelihood of confusion between the two marks, the first user will be able to prevent the second from using the trademark for those goods.

XI. Conduct a Search. A trademark search should always be conducted before commencing use of a trademark. This will avoid building up goodwill in a trademark and then having to change trademarks because of a prior user. There are companies that will conduct a trademark search for a few hundred dollars, and complete search results can be obtained in a few days. Interpreting the search results is a matter of legal analysis and is best conducted by trademark counsel.

A "TM" symbol should be used adjacent to any mark used in commerce, to give notice of the company's intent to use the name or symbol as a trademark. However, it is illegal to use the registration notice (®) unless and until a trademark actually is registered in the U.S. Patent and Trademark Office.

Chapter Eight
THE LAW OF BIOMASS
—Power Purchase Agreements and
Environmental Attributes—
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In recent years, we have seen renewed interest in the United States in the use of biomass as a fuel to generate electricity. The primary driver appears to be the advent of renewable portfolio standards (“RPS”) – now in effect in over half the states – with a national renewable energy standard (“RES”) being one of the key energy policy proposals advanced by the Obama administration. Particularly in areas of the country, such as the Southeast, that do not have good regimes for other renewable resources such as wind or geothermal, biomass power plants are slated to be key resources sought after by utilities seeking to meet their RPS requirements.

Biomass is, of course, one of the oldest energy sources, harkening back to the days of warming caves with wood fires. Strictly speaking, any facility that extracts the energy content of organic material could be considered “biomass.” But that would, of course, include any fossil fuel – coal, oil, and natural gas being the age old remains of ancient forests and swamps and the animals that inhabited them. In modern usage, the term tends to focus on nonfossil fuels such as hog fuel (the waste wood left over from processing trees for lumber, paper, and particle board), waste wood (construction debris), landfill gas, yard and forest debris, and agricultural wastes.

Energy can be extracted from biomass through a number of processes and with a variety of different end uses. It can be converted into biofuels such as ethanol and biodiesel; processed through a biodigester to produce and capture fuels such as methane and synthetic oil; and burned to produce steam, which can be used either as process steam in manufacturing operations or to power a turbine to generate electricity.

Before turning to the key issues to be addressed in a biomass power purchase agreement (“PPA”), we will first examine some general market considerations that bear on these types of projects.

I. The Impact of RPS. With the advent of state RPS and the prospect of a national RES, biomass generating facilities can be especially attractive to both developers and purchasing utilities. Utilities tend to assign them greater value than some other forms of renewable resources because, unlike intermittent resources such as wind and solar, biomass facilities are baseload facilities that can produce power on a 24/7 basis and are dispatchable. They can thus be utilized to meet a utility’s load in ways that intermittent resources cannot. These advantages can make biomass plants very attractive investments. For example, a biomass facility with a 15 MW net output can produce revenues equivalent to a 45 MW installed capacity wind farm with a capacity factor of 30 percent, and at a significantly lower capital cost.

II. Facilities Located at Wood and Paper Mills. In the past, many biomass plants were constructed by independent power producers at existing wood and paper mills owned by third parties. Such mills are a natural setting for a biomass powered generating plant, as the mill itself produces the needed fuel as a byproduct of the wood or paper making process. The downside, of course, is that the biomass facility is dependent on the continued viability of the mill, which can make the electric generation very vulnerable in the event of serious downturns in the markets for the mill products. Thus, it can be crucial for a mill facility to have ready access to a backup source of fuel.

In recent years, many mill owners have undertaken to build and own biomass facilities themselves, as they can represent a very valuable addition to the mill's revenue base. However, an independent power developer may still find a role in such mill owner facilities, as the mill owner often seeks to hire knowledgeable developers to assist in the design, construction, and operation of the facility, as well as in the marketing of the power produced.

In addition, the various federal and state tax incentives and credits, as well as the Biomass Crop Assistance Program (BCAP), provide various other incentives to biomass development.

III. The Parties.

A. The Seller. The seller is often the developer and owner of a biomass plant that will generate both energy and environmental attributes ("output"). But the seller may also be a power marketer that is buying the output of a plant and selling it to one or more purchasers. If a company is reselling output, the resale PPA will usually track the relevant terms of the underlying PPA because the marketer will not want to promise more than it has the right to deliver. As a result, the marketer will often use a "back-to-back" PPA for the resale. The resulting terms will be almost the same as those in the underlying project PPA, except for price or other unique items that the power marketer does not wish to pass through to the ultimate buyer.

B. The Buyer. The buyer is often a utility that purchases the biomass project's output to serve its load. The utility may also be motivated by an RPS, an RES, or another regulatory policy that encourages the development of biomass power and other forms of renewable energy. The significance of this driver is growing, as 28 states now have RPS, and a national RES in some form may be enacted in the future.

In a state that permits direct access to retail customers or allows renewable energy to be sold at retail, the buyer may be a retail purchaser, such as a manufacturing facility that wishes to hold itself out as a green company. Power marketers may also buy output for resale to one or more third parties. Power marketers sometimes can purchase all of a project's output, taking a "merchant position" and thereby enabling the owner to finance the plant.

C. Credit Support Provider. The PPA will require the buyer to buy the output that the seller delivers. It may also require the seller to pay the buyer if the project is not built on schedule or fails to achieve certain performance standards. Each party will be concerned about the other's ability to satisfy these payment obligations. If one party is not creditworthy, the other may require it to provide a guaranty, post a letter of credit, deposit cash collateral, or pledge other security to ensure that amounts due under the PPA will be paid. Utilities commonly require developers to post some form of performance assurance for both the development and operational phases of a project, while utilities generally resist posting any type of credit support, except in some cases in response to a credit downgrade.

IV. The Term.

A. Project Financing. If the biomass plant is financed with limited recourse financing, the term of the PPA should be sufficient to satisfy the project lender.

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 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. Biomass plants generally have an economic life of at least 25 to 30 years. Because the purchaser under a PPA effectively pays for the entire capital cost of the project (plus a profit to the owner), the purchaser normally will want the PPA to capture the entire value of the project by covering the entire economic life of the facilities. Therefore, it is not unusual to see biomass PPA terms of 25 years, occasionally with a five-year renewal option. As biomass developers become more confident in the long-term existence of markets for biomass energy (and perhaps less certain about the expense of operating and maintaining a biomass plant in the later years), PPA terms are more frequently 15 to 20 years in duration with no renewal option.

C. Effective Date. The PPA will be binding on the date it is signed (often called 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 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 25th anniversary of the January 1 following the commercial operation date. Thus if the term was 25 years and commercial operation began on November 1, 2010, the term would end on January 1, 2036. In other PPAs, the term begins on the commercial operation date and extends for a specified number of years.

The commercial operation date often starts the PPA’s term, determines whether the project has avoided liquidated damages by achieving its “guaranteed commercial operation date,” and establishes the point at which the price switches from a “test energy rate” to a “contract rate.” It is therefore important to define commercial operation date carefully. Generally, commercial operation date can be defined as the date on which the project’s generators and all other portions of the project necessary to put it into operation with the interconnection facilities and the transmission system have been tested and commissioned, and are both authorized and able to operate and deliver energy to the transmission system in accordance with prudent utility practices. The parties often negotiate more specific standards for judging whether commercial operation has been achieved and occasionally require that an independent engineer be engaged to make findings that support the achievement of commercial operation.

The question of whether a project has achieved “commercial operation” sometimes produces disagreements. The developer typically wants to make the standards for commercial operation as objective as possible so that, if push comes to shove, a third party can decide whether commercial operation has occurred; utilities usually try to preserve some discretion to decide whether or not the project has achieved commercial operation. To avoid triggering expensive dispute resolution mechanisms such as mediation, arbitration, or litigation, PPAs often include a “technical dispute” provision that authorizes each party to submit certain disputes to an independent engineer who can make a binding determination about specified matters such as whether commercial operation has occurred.

E. Termination Before the Commercial Operation Date. 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.

Common reasons for early termination include the (1) failure of a public utility commission to approve a PPA or to provide for its costs to be passed through to ratepayers; (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) project's failure to achieve commercial operation by a certain date; and (7) failure to qualify for the production tax credit, investment tax credit, or grants in lieu of investment tax credit. With respect to the grants in particular, the PPA will need to carefully address the dual requirement that the developer start construction before the end of 2010 and place the project in service no later than January 1, 2014. 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). In cases where the buyer can invoke a termination right after the seller has exhausted its right to pay delay damages, careful attention should be paid to limiting the developer's liability and the purchaser's remedy to the delay damages already paid to buyer or to some other clearly defined payment.

V. Purchase and Sale.

A. **Delivery Point.** The PPA will require the sale of energy to occur at a specified delivery point. If the energy is to be delivered at the plant 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 provide necessary and adequate transmission to take the energy away from the project's busbar or otherwise assign to the seller the curtailment risk associated with inadequate transmission away from the project. In some situations, however, the purchasing utility will seek a delivery point that is remote from the biomass facility. This often occurs when the facility is not located within the purchaser's operating area and the purchaser does not have, and does not want to arrange, the transmission necessary to deliver the power to its load. In this 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 at the delivery point. Occasionally, the seller will secure a transmission service agreement and assign it to the buyer as part of the PPA transaction. If this occurs, the seller must be careful to create a security interest in the transmission rights, use an automatic reversion provision in the assignment, or take other appropriate steps to make sure it will get its transmission rights back promptly if the buyer defaults under the PPA or goes bankrupt. This is especially important if the project is not interconnected to a liquid market and the loss of the transmission service would have the practical effect of stranding the project.

Note that transmission ancillary services can be costly and should be specifically allocated to either buyer or seller, as appropriate, in the PPA. Title and risk of loss pass from seller to buyer at the delivery point.

B. Pricing.

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.

In most situations, the power is sold to a utility through a request for proposals (“RFP”) process, with the goal being to have the PPA signed and in effect before construction of the power plant begins.¹ In some cases, the power is sold pursuant to negotiations with the utility outside an RFP process. Whichever route is pursued, the developer must constantly keep in mind the impact that changes in the tax subsidy, and the terms on which the subsidy can be monetized, will have on any power price. Signing up for a power price that proves too low under changing conditions can lead to a Hobson’s choice: either build and operate a plant that may not be economically viable (assuming it can be financed in the first place), or risk being liable for breaching the PPA by failing to build the plant. More likely, an inadequate power price will simply mean that the project will not be built for lack of financing.

To address this risk, the developer, in submitting a bid pursuant to an RFP process, should condition the price offered on appropriate assumptions, and make clear that if the assumptions change, it will be necessary to revisit the price. And in the PPA itself, the developer should seek a termination right whereby if satisfactory financing is not obtained, the developer may terminate the PPA. Such a termination right is fairly common in PPAs for renewable resources, but purchasing utilities naturally do not favor them.

One legitimate concern the utility may have is the fear that the PPA will be signed and, during the period between signing and commercial operation, market prices for the power will go up significantly, thus giving the developer an incentive to terminate the PPA in order to secure a higher power price. These concerns can be addressed in a number of ways: conditioning the termination right on certain objective criteria related to the financing;² prohibiting the developer from selling the power from the project to any party other than the original buyer for a period of years after the termination, unless the energy is first reoffered to the original buyer on the same terms and conditions as originally agreed to; or even providing for an appropriate termination payment to be made by the developer if the right is exercised. Which of these or other possible approaches is used in a given case is a matter of negotiation aimed at addressing the particular concerns of the parties. But fundamentally, such a termination right should be included where these pricing risk factors come into play. It does the utility no good to have a nonterminable PPA if the factors noted ultimately prevent the developer from constructing and operating the project profitably.

2. **Fuel Risk.** Before the recent economic downturn, the competition for fiber – including the waste wood products that serve as the primary fuel source for biomass facilities – was intense. With the slowdown in construction activities caused by the recession and the resulting impact on the wood products industry, the demand for fiber has fallen. But regardless of how demand for fiber and the availability of wood fuel may fare as the current recession draws to a close, one can rest assured that as the economy cycles through another growth period, waste wood products will once again become the object of great demand. Indeed, locking up

¹ Indeed, without a PPA in place, third-party financing – whether in the form of debt or equity – is not likely to be secured.

² In order to preserve confidentiality of the developer’s proprietary business information, this may include provisions calling for the relevant data to be submitted to an independent third party for review and verification in the event the termination right is exercised.

long-term, secure fuel supplies at a workable price has long been one of the trouble spots in waste wood biomass plants. Even if a secure supply of waste wood at a workable price can be secured pursuant to a long-term contract, the cost of transporting the waste wood to the biomass facility can be subject to severe adverse changes when the price of diesel fuel rises dramatically, as it did in mid-2008. Note that the fuel issue has two distinct aspects: securing the fuel at a workable “all-in” price (including transportation costs) and making sure the fuel will, in fact, be available. If the facility developer does not take steps to address the potential long-term changes in the price and supply of fuel and related transportation over the term of the PPA, the result can be economic ruin.

It is tempting to think that the fuel risk can be eliminated merely by securing a fuel supply contract with a term equivalent to the term of the PPA. But this can be an illusion. In what is arguably the most secure fuel supply arrangement – a long-term contract with a mill owner to provide waste wood at a fixed (or even escalating) price to supply the needs of a biomass facility located at the mill site – one eliminates a good portion of the risk, especially those risks associated with the fuel transportation costs. But one must still consider the long-term viability of the mill in question. The last few decades have seen many mills close down from causes ranging from lack of suitable wood supplies (as happened to many Northwest mills when the supply of large, old growth trees ceased in the 1980s) to lack of demand for wood products (as happens in periods of recession). And even when the fuel supply is nonmill waste wood – for example, construction debris – the fuel supply can shrink dramatically in economic downturns, as the slowdown in construction that results necessarily means a diminished supply of waste wood from construction activities.

There is no perfect method of protecting against such supply risks. But there are steps that can be taken. In the first instance, the best protection is to undertake a detailed study of the total waste wood supplies within transport distance of the biomass facility. Such a study would focus on a larger and a smaller geographic area – the larger area representing the maximum transport distance when diesel fuel prices are relatively low, and the smaller area representing the maximum transport distance when diesel fuel prices are relatively high. It would also look at the extent to which there is competition for the waste wood in the relevant geographic area. In this regard, one of the more difficult points of analysis is the extent to which other biomass facilities will come on line in the future that will compete for the fuel supply and cause upward pressure on the price. If a properly done study shows a supply of available waste wood sufficient to meet the needs of the subject facility as well as competing facilities that may be developed in the future, then the developer has some assurance that the biomass facility can be economically operated under a variety of changing market conditions. It is, of course, not a substitute for contractually securing a long-term fuel supply and arranging for a workable backup supply. Such arrangements can go a long way to insulating the biomass facility from changing market conditions, and are to be preferred to simply “playing the market.” Indeed, without such arrangements supported by a well-executed fuel supply study, financing for the plant may not be available.

Where the waste wood supply is to consist of forest debris, the developer should explore arrangements with the owner of the forest lands that give the developer the right to harvest the debris directly in the event the harvesting company encounters difficulties that prevent it from performing. But in doing so, the developer must consider the extent to which it could economically harvest the forest debris in circumstances where the harvesting company cannot. If the reason for the harvesting company’s nonperformance is unrelated to the cost of the harvesting operation itself – for example, it is part of a timber operation that experiences a downturn due to falling demand for finished lumber – then it may be possible for the developer to harvest the forest debris

directly. But if the harvesting company's nonperformance is tied directly to the harvesting operation – for example, high diesel fuel prices – then the developer is not likely to be able to economically conduct the operations itself.³

The risks associated with the all-in price of delivered waste wood fuel are generally dealt with in the PPA by means of a fuel adjustment clause. This can be structured in any number of ways. For example:

- The delivered price of the waste wood can be made a pass-through element of the price for power under the PPA. This can be done with the fuel price itself, the transportation costs, or both. This provides maximum protection for the developer, but will likely be a concern to the power purchaser who will want various control mechanisms built in to help ensure that the developer does not pay too much for the fuel as market conditions change. And the purchasing utility may want the mechanics of any such pass-through clause to be tied to its overall cost of fuel or electricity from other resources, so as to avoid a situation where the cost of power from the biomass plant becomes too high relative to the cost of power from other resources in its portfolio.
- The power price under the PPA can subject to an inflationary adjustment tied to the market price of the waste wood, transportation costs, or both. If this approach is used, careful thought must be given to what inflation index or other indicator of market price will be used. Using a consumer price index can be very risky, as the cost of waste wood and transportation costs are only two elements of such a broad-based index. As a result, one can experience extremely high increases in the cost of these items that are not adequately reflected in the selected consumer price index. This happened with diesel fuel costs in 2008 – inflation in general was quite low, but diesel fuel costs experienced a sudden and dramatic increase. In addition, one must keep in mind that whatever index might be chosen, there will inevitably be a lag between when a cost increase is experienced and when the inflationary adjustment clause kicks in. One should thus consider some provision where, in extraordinary circumstances, the inflationary adjustment can be made off-cycle, rather than waiting for the annual adjustment time to roll around.
- The risks associated with the delivered price of the waste wood can also be shared between the developer and the power purchaser. For example, the PPA can contain provisions whereby the developer absorbs a certain level of increase in the delivered cost, with increases beyond that being shared between the developer and the power purchaser up to a certain level, beyond which any increases in the delivered costs are treated as a pass-through element of the power price.

³ Just as a developer must consider the risks associated with rising diesel fuel prices in the PPA itself, it is equally important to deal with them in the fuel supply contract with a third-party waste wood supplier. Without appropriate protective clauses in the fuel supply contract, the fuel supplier may simply not be able to perform its obligations if the market price of diesel fuel goes through the roof.

- Another alternative is to structure the PPA as a tolling arrangement. Under this approach, the developer agrees to build the biomass facility and process through it whatever suitable fuel the power purchaser causes to be delivered to the facility. Under a tolling arrangement, the purchaser takes the fuel risk. In exchange for taking this risk, the purchaser has the direct ability to manage the fuel risk itself (which it may be in a better position to do than the developer), while avoiding the other risks of building and owning the plant itself (*e.g.*, the risk of equipment failure or improper maintenance or design).

The foregoing approaches are subject to many variations, with elements of each capable of being combined in a variety of ways. The key in all cases is to fully understand the risks associated with the delivered price of the waste wood fuel over the life of the PPA and then work with the purchaser to find mutually acceptable methods of addressing them.

3. **Test Energy Rate.** The PPA may require the purchaser to buy power from the plant as it is installed, connected to the transmission grid, tested, and made operational, even though the project as a whole has not achieved “commercial operation” as defined in the PPA. To encourage the seller to achieve commercial operation as soon as possible, such energy is often sold at a test energy rate, which is lower than the contract rate that will be paid once the commercial operation date is reached. However, in Independent System Operators (“ISO”)/Regional Transmission Organizations with energy markets (*e.g.*, the Midwest ISO), the seller may choose to sell its test energy into the market rather than to the purchaser.

4. **Excess Rate.** A PPA often requires the seller to specify how many MWhs the plant is expected to produce each year. This output estimate may form the basis of an output guarantee or a mechanical-availability guarantee. 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, 120 percent of the estimated annual output.

5. **Capacity Rate.** It is fairly common for a biomass PPA to give the purchasing utility displacement rights – that is, the right to tell the developer not to deliver power for a specified period of time. This can be a valuable right for the utility, as it gives it needed flexibility in managing its resources to meet load in a variety of circumstances.

Where displacement rights are granted, the price for the power is typically broken down into a capacity rate and an energy rate. Simply put, the capacity rate reflects the fixed costs of having a facility available to produce and deliver power, whereas the energy rate reflects the additional cost (fuel and other operating costs) associated with the actual production and delivery of electricity. Where displacement rights are granted, the PPA typically provides that when displacement rights are exercised by the purchasing utility, the utility will pay the developer the fixed cost embodied in the capacity plus the grossed-up (after tax) value of the production tax credits

(“PTCs”)⁴ and a profit element, but it will not have to pay the variable costs embodied in the energy rate. In this way, the developer remains largely neutral as to whether the utility exercises its displacement rights; properly structured, the developer will make essentially the same return during periods of displacement as it will when power is being delivered.

But the developer must consider how to avoid its variable costs during periods of displacement. In particular, the developer must consider how it will manage its fuel supply when no electricity is being produced. Ideally, the fuel supply arrangement would give the developer the right to have fuel deliveries cease during displacement. In situations where there is a ready alternative use for the fuel, this should not be problematic for the fuel supplier. But that may not always be the case, and the developer should ensure that the PPA requires the purchasing utility to bear any additional costs the developer is obligated to pay to the fuel supplier when displacement rights are exercised by including them as a pass-through element of the displacement payments.

C. Environmental Attributes. Environmental attributes are the credits, benefits, emissions reductions, environmental air-quality credits, and emissions-reduction credits, offsets, and allowances resulting from the avoidance of the emission of a gas, a chemical, or another substance attributable to the biomass 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 should make it clear that PTCs, investment tax credits, cash grants in lieu of investment tax credits, biomass energy incentives (such as those that may be provided under a state program), and any other environmental attributes necessary to generate the quantity of power being sold to the purchaser 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. Failure to do so can (and has) led to disputes about whether the generator or the offtaker is entitled to the ownership and use of the environmental attributes. In addition, the PPA should clearly define the environmental attributes being sold; many utility form PPAs begin with very broadly worded environmental attribute definitions that can inadvertently transfer upstream methane and carbon offset credits that the seller plans to sell to a carbon offset purchaser. The developer should consider whether to retain carbon offset credits or, for biomass in particular, methane reduction credits (especially in the case of anaerobic digesters or landfill gas facilities that use captured methane to fire a generator that delivers electricity to the buyer). This is particularly important if the developer has assumed a separate revenue stream for such “upstream” credits.

If environmental attributes are being sold, the seller will usually warrant title to the attributes but will not warrant the current or future use or value of the attributes, or whether and to what extent they will be recognized

⁴ If the power price under the PPA is premised on the developer (or its tax equity investor) receiving the value of the PTCs, it is essential that the developer also be made whole for the value of any PTCs that are lost as a result of electricity not being produced during the displacement period. This is done by including as an element of the displacement payments the value of the lost PTCs. This value is generally determined by calculating, on the basis of the normal operating characteristics of the biomass plant, the amount of electricity that would have been produced and delivered during the curtailment period, and then multiplying that result by the per MW amount of the PTCs. In addition, because the payment by the utility for the lost PTC value will be taxable income to the developer (whereas receipt of the PTCs themselves is not productive of taxable income), it is also necessary to “gross up” the payment so that on an after-tax basis, the developer is left with the same economic result that would have been achieved had the electricity been produced and the PTCs received.

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.

The PPA should specify the delivery method of the environmental attributes. In the past this was done through a monthly or quarterly attestation and bill of sale delivered by the seller to the buyer. Today, most buyers will insist on the transfer of environmental attributes through a regional renewable energy registry and certificate tracking system, such as the Western Renewable Energy Generation Information System (WREGIS) or the Midwest Renewable Energy Tracking System (M-RETS), to ensure compliance with state RPS. These regional tracking systems generally involve both the verification of the number of environmental attributes created by a particular project in a particular calendar month and the transfer of such environmental attributes from one account holder to another.

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 yet tax wholesale energy sales, that may change as states seek new sources of tax revenue. Wyoming recently imposed a \$1 per MWh excise tax on wind generation. Other recent changes in costs, such as the Bonneville Power Administration's "wind integration charge" in the Pacific Northwest and the proposed "injection/withdrawal" charge under consideration by the Midwest Independent Transmission Operator (MISO), reveal that energy projects may be exposed to unexpected and sometimes surprising charges during the long term of the PPA. The parties may wish to consider allocating the tax liability and other costs that might result from legislation or regulatory developments occurring after the effective date of the PPA.

VI. 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 make some commitment to develop the project. Many tense negotiations revolve around what the seller will or will not be required to do to develop the project, as well as the off-ramps that each party has if the project does not achieve certain stated milestones.

B. Status Reports. The buyer is typically interested in the ongoing development of the 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. 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 often includes a schedule of certain project milestones (*e.g.*, the date by which the seller must secure project financing, the date by which long-lead-time equipment 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 when 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.

Many interesting negotiations revolve around the off-ramps that the seller will have, versus the 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. The buyer may seek to prevent the seller from "arbitraging" the project by absorbing the delay damages and then reselling the project's output at a higher price, and so may require the developer to agree to offer the project at the agreed-on price and terms if the project is completed within some period after the PPA has been terminated. If the seller is willing to agree to this provision, it will often seek to include language that enables it to adjust the offered price if the delay in project construction occurs because of force majeure that requires expensive adjustments (*e.g.*, costly permit conditions) or because the project is delayed beyond an important start of construction or placed-in-service date for tax credit purposes.

D. 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. The buyer will be responsible for arranging and paying for transmission from the delivery point. (For more information on interconnection and transmission-related issues, see [Chapter 12](#).)

VII. Performance Incentives. A seller will usually prefer to enter into an "as-delivered" PPA, which means that the seller is obligated to deliver only what the project actually produces. A buyer will often require the seller to warrant or guarantee that the project will meet certain performance standards. Such guarantees usually enable the buyer to recover all or part of its incremental cost of purchasing replacement power or environmental attributes in the market to the extent that the project fails to perform as expected. Performance guarantees enable the buyer to plan around the plant's expected output for both load and, if applicable, RPS compliance, and strongly encourage the seller to maintain a reliable and productive project.

A. Output Guarantees. The PPA may include an output guarantee to the buyer. An output guarantee requires the seller to pay the buyer if the project's output over a specified period fails to meet a specified level, after taking into account output lost because of force majeure or maintenance or other agreed-on subtractors. 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 at the project. The owner should offer such a guarantee only if very confident about the project's fuel supply, technology, and capacity factor.

B. Liquidated Damages. If a guarantee is not met, the PPA usually provides a mechanism for determining the damages suffered by the buyer. First, the parties determine the output shortfall (stated in MWhs) relative to the amount of output that the buyer would have received had the project lived up to its guarantees. Second, the shortfall is multiplied by a price per MWh determined by reference to an agreed-on index. Because market indexes currently 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 pays the liquidated damages to the buyer or credits the damages against amounts owed by the buyer under the PPA. The seller may in addition seek to include the right to cure any output shortfall through delivery of replacement energy and/or environmental attributes at its option where seller and buyer can mutually agree on the time and place for such replacement deliveries. In any case, the seller will likely seek to cap liquidated damages or its replacement obligation on an annual or aggregate basis.

C. Termination Rights. To protect against chronic problems at an unreliable biomass plant, the PPA may allow the buyer to terminate the PPA if the output or mechanical availability or output of the project is below a stated minimum for a certain number of years.

VIII. 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 natural 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 it 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 list items that the parties agree are not force majeure events.

IX. 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 utility practices. Such duties typically include regular inspection and repair, as well as completion of scheduled maintenance. To make it clear that the parties do not intend to allow the buyer to use the prudent utility practice standard to improve on any output guarantee, the PPA will often provide that the liquidated damages due for a failure to achieve guaranteed output or mechanical availability is the buyer's sole remedy for an underperformance by the biomass facility.

B. Metering. The metering provision 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 the accuracy of the seller's meters. The PPA usually states how often such tests will occur and 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.

X. Billing and Payment.

A. **Billing and Payment.** The PPA will describe 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 certain period of time (usually one or two years). 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, upon 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.

XI. Defaults and Remedies.

A. **Defaults.** 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 specified material defaults;
- The bankruptcy, reorganization, liquidation, or other similar proceeding of any party; or
- Failure to provide or replace credit support within an agreed-on time.

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, or to suspend performance of its obligations. 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.

B. **Damages for Breach.** It is almost universally the case that PPAs will contain a standard provision whereby, in the event of a default by one of the parties, the defaulting party will be liable only for direct, actual damages and will have no liability for consequential or incidental damages such as lost profits. This is an appropriate provision for the most part, as the liability involved in assuming responsibility for such consequential or incidental damages can far exceed any economic benefit that the defaulting party would have received had the PPA been fully performed. Thus, the typical seller's remedy for a default by the buyer is the difference between the PPA price for the remainder of the term and the market price the seller can obtain for the power following the buyer's default, and the typical buyer's remedy for a seller default is the difference between the price at which the buyer can obtain replacement power and the price it would have paid under the PPA.⁵

However, where – as in the typical biomass facility – the PPA price is premised on the assumption that the seller will be receiving PTCs in connection with each MW of power delivered, the typical remedies outlined above are

⁵ In each case, the nondefaulting party also can recover the direct expenses incurred as a result of the default – for example, in the case of the seller, the costs of arranging a sale of the power to another party and, in the case of the buyer, the costs of arranging a purchase of replacement power.

not sufficient to make the seller whole in the face of a buyer default. This is because if the buyer's default occurs during the PTC period, the seller will almost inevitably lose PTCs that would have otherwise been received had the buyer not defaulted. Even if the seller ultimately finds another purchaser for the power, there will likely be some period of time during which no power is being sold while the seller arranges for an alternative sale.

Because this lost PTC value is arguably a consequential or incidental damages element, it is crucial that the PPA except from the prohibition on such damages the seller's right to receive the grossed-up (after tax) PTC value for any PTCs lost as a result of the buyer's default. Whether or not the lost PTC value is considered a consequential or incidental damages element depends on the laws of the state that govern the PPA. A review of this issue in several jurisdictions reveals that there is no uniform rule: the courts of some states would seem to treat them as such, while the courts of other states would seem not to. But in many states, there simply is no clear answer to the question. Thus, in order to avoid uncertainty in this regard, it is essential that the PPA itself resolve any doubt by expressly providing that the seller has the right to recover such lost PTC value upon the buyer's default.

XII. Project Lenders and Equity Investors. Even if the project is expected to be financed off of 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 and cure rights of future tax equity investors.

XIII. Buyer Options to Purchase the Project or Special Purpose Entity. In recent years, utilities have shown a growing interest in owning renewable energy projects. In PPAs, this interest often takes the form of an option to purchase the project or the entity that owns it on or after a specified date. Such options should be handled carefully. An option to purchase the project or the interests in the special purpose entity that owns the project for anything other than the project or entity's fair market value at the time of exercise has been generally disfavored by tax attorneys. Other types of options can raise a fundamental question as to whether the owner of the project is an owner for federal income tax purposes or whether the financing arrangement is something other than "ownership" (*e.g.*, a loan). Revenue Procedure 2007-65 explicitly provides as one of the qualifying elements that there is no developer/investor/related party purchase option for less than fair market value (at exercise).

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

XV. Uniform Commercial Code. In some states, electricity is considered to be a "good" for purposes of the Uniform Commercial Code ("UCC"). In those states, the UCC would impose an implied warranty of merchantability and fitness for a particular purpose on the sale of electricity (and possibly on the sale of the associated environmental attributes) unless those warranties are conspicuously disclaimed in accordance with UCC § 2-316. In a state that applies the UCC to PPAs, a party with reasonable grounds for insecurity about the performance of the other party may require the posting of adequate assurances of performance under UCC

§ 2-609. This “reasonable assurances” standard may apply in cases where a PPA does not expressly disclaim the applicability of the UCC’s adequate assurances provisions, even if the PPA does not expressly apply a credit support standard to the buyer. In states that treat electricity as a good, the parties will want to give careful consideration to the effect of the UCC on the PPA.

Chapter Nine THE LAW OF BIOMASS —Regulatory and Transmission-Related Issues—

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Long before a biomass energy developer begins generating the first Megawatt (“MW”) of power, the developer must decide on a regulatory structure for the project, negotiate and execute transmission and interconnection agreements, and purchase necessary transmission ancillary services. This chapter presents a general discussion of these issues. 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. Regulatory Structure Issues—PUHCA, EWGs, and QFs. The Energy Policy Act of 2005 repealed the Public Utility Holding Company Act of 1935 (“PUHCA 1935”), in part, and enacted 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 eliminated certain restrictions that prevented the consolidation of the electric utility industry, and corporate affiliations allowed under PUHCA 2005 present both challenges and opportunities for biomass energy developers.

Although nonexempt biomass energy project companies are no longer subjected to extensive regulation by the Securities and Exchange Commission, 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. However, biomass energy project companies may obtain exemptions from these requirements, with the two most common exemptions occurring when a project owner obtains status as either an exempt wholesale generator (“EWG”) or a qualifying facility (“QF”). Each of these categories is summarized below.

In addition, because privately owned biomass generation companies are public utilities under Part II of the Federal Power Act (“FPA”), developers are subject to FERC’s regulation under that Part, including rate regulation, electric reliability rules, and other regulation. However, a developer may avoid rate regulation under Section 205 of the FPA for certain small projects by obtaining status as a QF. In addition, a developer of a project of any size can obtain market-based rate authority if it can make the necessary showings; such authority exempts the developer from the need to justify its rates on a cost basis. These other regulatory issues are addressed in Sections A, B, and C below.

A. EWG 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 biomass generation facility and sell its electric 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. 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 FPA. 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. Power sellers that have market power may nevertheless obtain market-based rate approval by showing that the seller has adequately mitigated its market power. Because FERC often revises or modifies its criteria for satisfying these requirements, biomass developers should contact knowledgeable attorneys before filing for market-based rate approval. Once FERC grants market-based rate approval, the EWG will have ongoing filing and reporting requirements and must comply with FERC's rules regulating market behavior.

B. QF Status. The Energy Policy Act of 2005 also changed the rules for QFs, introducing both risk and opportunity. Developers of new biomass projects, as well as sellers under existing QF contracts (especially with contracts that will be expiring soon), 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, including biomass projects, all which are referred to as QFs. Before the passage of the Energy Policy Act of 2005, PURPA provided valuable benefits to biomass energy developers, one of which was the exemption for biomass QFs producing up to 30 MW from many provisions of the FPA 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 the eligibility requirements narrower than in the past. However, the Energy Policy Act of 2005 also eliminated PURPA's ownership restrictions, which has generated interest in utility ownership of QFs—increasing the value of both new and existing QF projects.

The Energy Policy Act of 2005 narrowed the advantages that biomass generation QFs previously enjoyed compared to EWGs. First, as mentioned above, QFs no longer enjoy broad exemptions from the requirements of the FPA. 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 FPA. 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. Utilities may now petition FERC for an exemption from PURPA's mandatory purchase requirement if the utility can demonstrate that a QF in its service territory would have nondiscriminatory access to 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 generally interconnected under state regulators' interconnection rules, which may or may not be advantageous for a particular project. A QF may have an option to interconnect under FERC rules.

C. Other Ongoing Regulatory Requirements. Whether a biomass developer is an EWG or a QF, or has FERC approval to sell power at market-based rates, the biomass 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 biomass developers, and therefore consultation with knowledgeable attorneys is recommended.

II. Transmission and Interconnection Issues. To obtain project financing and gain access to markets for project output, biomass project developers 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 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 project sites.

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. In regions where the transmission system is owned and operated by separate entities, FERC will require that both of those entities sign the interconnection agreement. FERC Order No. 2003 established standard interconnection procedures and a standard interconnection agreement for generators larger than 20 MW ("Large Generators"). Similarly, FERC Order No. 2006 establishes standard interconnection procedures and 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 ("ISO"), the California ISO, 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.

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.

Order Nos. 2003 and 2006 directly assign the costs of interconnection facilities and distribution upgrades to the interconnection customer. Network upgrades (*i.e.*, upgrades to the transmission system at or beyond the point of interconnection) are treated differently, however, and even though the costs of upgrades may initially be borne by the interconnection customer, those costs may be reimbursed to the interconnection customer in the form of transmission credits. In certain transmission systems, however, such as those controlled by the Midwest ISO or the PJM Interconnection, the interconnection customer will not be entitled to all or part of this reimbursement. For most interconnections of Small Generators, it is unusual to have network upgrades. The nature of the network upgrade reimbursement (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 such facilities as are necessary to reach the point of interconnection are properly classified as interconnection facilities. 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.

B. 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. An alternative is for the project owner to sell some or all of the output under a contract shifting the transmission obligation to the purchaser. This typically requires that the contract terms qualify the sale for designation as a network resource by a load on the transmission system to which the project is interconnected. In addition, acquiring adequate transmission service is essential to obtaining debt or project financing on reasonable terms and conditions.

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 an ISO rather than the actual owner of the applicable transmission facilities. Acquiring transmission service from transmission providers not subject to FERC’s jurisdiction under Sections 205 and 206 of the FPA 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 MW of service. These transmission pricing rules may be different if the transmission provider is an RTO. For instance, the RTO may eliminate rate “pancaking,” which is the imposition of multiple transmission charges for use of more than one transmission owner’s transmission facilities.

III. Greater Access to the Transmission Grid. In 2007, FERC issued Order No. 890, which reformed Open Access Transmission Tariff (“OATT”) rules and is designed, in part, to improve transparency of transmission service and reduce transmission barriers for new projects. Order No. 890 is the first major reform of the OATT since it was enacted 14 years ago. The details of Order No. 890 and its progeny are too voluminous to be adequately covered in this chapter, so only a few key points will be discussed.

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 options for generation 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 has been 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 transmission 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 capability (“ATC”) is not available.

Modified redispatch service, which adjusts the output of various generators to allow transactions that would otherwise 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.

Finally, Order No. 890 contains other amendments that are intended to increase access to existing transmission capacity and/or promote transmission expansion in key areas. For example, 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. As stated above, the details of Order No. 890 and its progeny are too voluminous to be adequately covered in this chapter and, therefore, biomass developers and generators should consult a knowledgeable attorney for an update on this and other FERC proceedings.

IV. Reliability Standards. Developments in federal law have transformed historically voluntary standards into mandatory reliability standards with accompanying obligations and potential sanctions for failure to comply. In compliance with federal law requiring it to do so, FERC issued Order No. 672 in 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 upward of \$1 million per violation per day for noncompliance. Pursuant to the FPA, all reliability standards must be just, reasonable, not unduly discriminatory or preferential, and in the public interest. NERC has delegated to designated regional entities the authority to monitor and enforce the reliability standards. In addition to their delegated duties, regional entities may also enforce region-specific reliability standards.

The reliability standards may apply to users, owners, and operators of the bulk electric system, and the specific applicability of a particular standard is specified therein. The regional entities are tasked with maintaining a Compliance Registry, which lists organizations against whom the reliability standards are enforceable. If a bulk electric system user, owner, or operator fails to register with the Compliance Registry, then the regional entity may take steps to register that user, owner, or operator. The Compliance Registry lists organizations by function, and compliance is analyzed by reference to function-specific reliability standards.

As is most relevant to biomass developers, NERC requires that certain generator owners and operators register with the Compliance Registry. A generator owner is an organization that owns generating units, and a generator operator is an organization that operates generating units and supplies energy. There are minimum requirements before a generator owner or generator operator is required to register, and a biomass developer should consult with a knowledgeable attorney regarding such requirements. Though initially exempted from registration, QFs are now required 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 appropriate steps to determine whether they should register with the appropriate regional entity, to understand each function, and to implement a comprehensive program that will track and ensure compliance.

V. **Summary.** Recent developments have made access to the transmission grid both easier and more economical. In particular, standardized interconnection procedures and agreements for Large Generators and Small Generators subject to Order Nos. 2003 and 2006 help streamline the interconnection of renewable power sources with the transmission grid, and reformed procedures may help to speed clearing of interconnection queues that have become bogged down. Nevertheless, the regulatory area remains complicated and continually in flux, and thus a biomass developer is well served by contacting knowledgeable legal counsel to learn how to confront the various regulatory challenges that it will inevitably face.

Chapter Ten
THE LAW OF BIOMASS
—Biomass Supply Issues and Agreements—
Joe R. Thompson

Wood and other organic materials have been recognized as important feedstock for the generation of power for decades. Not until recently, however, has the use of these materials, now referred to as “biomass,” gained the support of the government and the renewable energy industry.

Biomass for power production involves using biologically derived products such as waste and clean/recycled wood; manure; specifically grown “energy crops” such as miscanthus; and residues from forestry, agriculture, and food manufacturers to generate heat, steam, electricity, or motive power. However, unlike first generation feedstocks such as corn and other grains that have sophisticated and developed supply mechanisms, biomass requires a formalized supply chain for the transition of biomass to deliver power. This lack of supply-side infrastructure introduces certain risks into the biomass project development model that, unless managed appropriately, can have a detrimental effect on the successful financing and operation of a biomass facility.

The biomass project developer should strive to manage the risks inherent in procuring biomass. Doing so requires gathering the necessary biomass intelligence as related to the specific project, addressing the risks, and establishing the supplier/developer relationship, if possible, through appropriately negotiated biomass supply agreement(s). This chapter presents some key baseline supply-side issues and key terms to be considered when negotiating supply agreements.

I. Production and Logistics. Biomass production and logistics require the attention of prospective suppliers and developers, financiers, and fuel off-takers. Production issues range from cultivating biomass resources to establishing the rights needed to harvest or collect the biomass in a manner that is consistent with current production paradigms, while addressing sustainability and ensuring the health and safety of the environment and those engaged in the activity.

The primary challenge in logistics is the lack of mechanized harvesting equipment and the means to efficiently and economically transport biomass from its source to the processing facility. Generally, the success of a biomass facility requires that the facility secure long-term access to the necessary biomass feedstock. As such, the developer should examine the economics of the biomass production system and the logistical system necessary to transport the feedstock to the facility. The developer will often find that multiple counterparties with wholly different skill sets and service offerings are necessary to complete these tasks.

Key action items and issues to consider when discussing the logistics with potential suppliers are listed below.

- A risk assessment and method statement should be prepared in advance by the supplier following an initial site visit and discussion with the buyer (developer). This assessment will take into account the hazards on site and the risks posed to pedestrians, vehicles, and property on the site during biomass delivery and offloading, and it should be formally reviewed on an annual basis or whenever a change to the hazards and risks on site is identified.

- In what form will the biomass arrive at the buyer's facility? The facility's conversion technology and staging area will determine whether the biomass must be supplied in pellets, bundles, bags, bales, or loose form or whether multiple forms are acceptable, and on what terms. Again, some initial examination is necessary as related to both the facility's site plan (which is often dictated by the technology being deployed) and the technology itself.
- What are the notice and delivery requirements? The developer, as the buyer of the biomass, needs to ensure that the supplier understands the supply requirements, and the parties would be wise to negotiate appropriate weekly, monthly, on demand, or other delivery obligations with proper notice and memorialize such terms in the applicable biomass or fuel supply agreement. If the timing requirement for a delivery is less than the notice period set forth in the agreement, an additional fee may apply to cover the costs of such "emergency" delivery. The buyer should require that the supplier send a confirmation of shipment notice to the buyer by electronic mail or facsimile. A paper copy of the confirmation of shipment notice should be provided to the buyer at the site(s) with the delivery of each load.

The parties should also agree to what times of the day deliveries to the facility may be made so as to minimize any disruption to the buyer's operations. If a delivery cannot be made within the agreed time frames, or the whole or part of the delivery is not possible due to certain activities at the facility, the supplier may be entitled to compensation to cover the cost of transport.

- When does title transfer? Risk mitigation strategies require that the parties agree on when the title to the biomass transfers from the supplier to the buyer. Typically, the biomass remains at the risk of the supplier until delivery to the facility or the agreed upon "delivery point" is complete (*i.e.*, the biomass is offloaded into the buyer's staging area).

II. Project Data and Biomass Specifications. In light of the many potential biomass feedstocks available for the generation of power and the aforementioned production and transport issues, the developer's need for a detailed biomass supply study addressing the quantity and quality of the feedstock, relative to the conversion technology that will be used, cannot be underestimated. Such a study will provide the developer with modeling data for confirming the proposed conversion technology, siting the facility, selecting a biomass supplier and/or harvester (which may be separate parties and thus require separate agreements), examining financing options, and evaluating the project's overall viability. In obtaining such a study, the developer should engage in the appropriate levels of due diligence with respect to those third-party consulting firms offering such services because a great deal is riding on the results of such studies.

With an understanding of the conversion technology, whether by chemical, thermal, or biological processes, and a comprehensive biomass supply analysis, the biomass project developer is better equipped to include the biomass specifications necessary to prove out the project's economic model into the negotiated supply agreement.

A. Quality Specifications. Quality specification provisions are typically closely related to the conversion technology and may include the following categories, based on a dry basis and as received: heat of combustion; moisture content (*i.e.*, the target moisture content on a wet basis shall be XX% by weight based on the relevant standards but in any event shall not exceed XX%); contaminants (*i.e.*, contaminants such as soil or stones, metal, and plastics should be less than XX% by weight of the total biomass load); ash content; and particle size of the biomass.

Upon delivery of the biomass to the buyer, the buyer should (1) perform a visual inspection to ensure conformity to the agreed specifications and (2) obtain samples in the event of a future dispute and to monitor the quality of biomass received. If the inspection or sample(s) reveals that the biomass does not conform to the specifications, the agreement may allow the buyer to reject the load in full. If it is not possible to visually check the delivery until it is unloaded, but it is subsequently found to not conform to the agreed specification within XX hours of delivery, then the buyer may reserve the right to reject the delivery. It is typically required that the rejected biomass be removed by, and at the expense of, the supplier. Any dispute over the quality specifications of the biomass will be resolved in accordance with the supply agreement's dispute clause.

B. Quantity Specifications. The quantity specifications are a function of the capacity of the technology to be used by the facility and the economically available quantities of the biomass that can be harvested and transported to the facility on a long-term basis. Issues related to quantity specifications are discussed previously in this chapter under "Production and Logistics."

III. Biomass Pricing and Payment. The developer should consider several factors when pricing biomass, including current and projected disposal costs for suppliers, transportation distances and related costs, biomass volumes to be made available or delivered by suppliers, a reliability quotient, biomass quality specifications, and processing costs. Two examples of current pricing formulas are \$XX per cubic meter of biomass and \$XX per ton of biomass. Loads of different volumes/weights are often charged on a pro rata basis in accordance with the agreed upon rate formula. The price of the biomass may be subject to annual escalators (*i.e.*, indexed to the price of diesel) and increased on a certain date of each contract year in the agreement.

To create some pricing consistency and objectivity, certain industry participants are working to create biomass indices based on prior reported purchase and sale transactions. Until such mechanisms come online, however, creating a pricing model is rather quantitative, and in some instances it has involved combining some of the elements above with additional indexed energy commodities such as oil. Developers needing to formulate a biomass pricing scheme in a long-term supply agreement should not underestimate the value of engaging qualified experts.

As for payment, the supplier may invoice the buyer on a weekly, biweekly, or monthly basis and, depending on the creditworthiness of the buyer, require prepayment. When invoicing, the invoice amount will be the number of loads delivered multiplied by the price per load adjusted for volume, weight, and quality specifications as outlined in the agreement, and payment will be due within an agreed-to number of days after delivery or receipt of the invoice. If payments are overdue, the supplier typically has the right to refuse to make further deliveries until all outstanding overdue invoices have been settled, and interest may be payable on amounts overdue at the applicable rate.

IV. Term. Financers will generally require that the term of the supply agreement exceed the term of the project's debt financing by a reasonable margin (ideally two or three years), or have the term aligned with or be no less than the term of the power purchase agreement. It is also important that the term of the supply agreement sufficiently accommodate for delivery of biomass for commissioning and performance testing of the facility. Negotiating a term that accomplishes the above will improve the creditworthiness of the project and hence the project's ability to obtain financing on reasonable terms.

V. Other Terms and Conditions. Additional terms and conditions to consider when developing a biomass project and negotiating the supply agreement may include:

Responsibility for Boiler Outage. Boiler outage or operational problems that are a direct result of substandard maintenance, boiler misuse or neglect, or boiler defects are typically not the responsibility of the supplier. In this instance, any cost that is incurred by the supplier as a result of not being able to deliver the biomass will be charged to the buyer.

The supplier usually will indemnify the buyer against the cost of repair to fuel handling and combustion equipment caused by the supplier or supply of biomass not in accordance with the specifications, with the exception of consequential losses such as having to pay for heat supplied from other sources to a limit of an agreed amount.

Insurance and Liability. The supplier will have general liability insurance of some agreed upon amounts, and the supplier's liability under the terms of the supply agreement may be capped or subject to a limit (including under any indemnity).

Force Majeure. The force majeure clause is a common term that excuses the parties from performance if an event outside of either party's control occurs. These events may include war, strikes, flood, drought, and crime. For example, a drought may limit or prohibit the supplier's ability to meet the quantity and quality specifications. The supplier would be required to deliver biomass to the extent available (unless otherwise excused by the buyer) but would not be responsible for damages for failure to meet contract delivery requirements and specifications as a result of the drought.

VI. Conclusion. Biomass supply presents unique challenges. Developers must consider the overall supply chain and take the time to analyze the project's economics, and expect to continuously work with suppliers, processors, and transporters to develop new biomass supply options. Once armed with the appropriate data, the developer is in a much improved position to define the duties and obligations of the supply-side counterparties in the appropriate legal agreements and documents. Developers should also consider the issues discussed elsewhere in this book to gain a better understanding of the key terms and considerations to be addressed when developing a biomass project.

Chapter Eleven
THE LAW OF BIOMASS
—Resolving Disputes: Preplanning—
Eric A. Bartsch

I. Overview. As with any development, a biomass project can become the subject of litigation in state and federal courts. Litigation can involve any of the topics discussed in previous chapters, as well as a host of other disputes that may develop during the life of the project. Anticipating what disputes may arise and proactively planning for their resolution, whether through litigation or otherwise, will increase the odds of a favorable result. This chapter outlines some issues to consider that may help circumvent problems and discusses potential areas of dispute in the development and operation of a biomass project.

II. Proactively Drafting Against Disputes. The many contracts associated with a biomass development project, including technology licensing, supply/offtake agreements, and construction-related agreements, can provide ample grounds for litigation. Retaining experienced counsel to assist with the drafting of the contracts, however, can minimize future disputes and, most importantly, provide a clear roadmap for resolution should a dispute over contract performance arise. Although contracts may specify that alternative dispute resolution (“ADR”) be used either as a prerequisite to the initiation of a lawsuit or as an alternative to litigation in state or federal court, ADR, depending on how it is drafted, can be just as costly as litigation. Therefore, careful consideration should be given to the pros and cons of ADR, as discussed later in this chapter. As the biomass industry matures, contracting parties are discovering that they need to look not just at the financial terms of their commercial agreements, but at the default and cancellation provisions as well. Unfortunately, a myth exists that the language at the back of a contract (default provisions, limitations of liability, attorneys’ fees, etc.) is just “boilerplate.” In fact, these contractual provisions can be the heart of a dispute, so a developer would be wise to make sure that these areas receive some attention by an experienced attorney.

A. Output and Requirements Clauses in Shutdown Mode. A hypothetical supply/offtake contract would provide for a feedstock supplier to sell, and the biomass facility to purchase, a set amount, an amount within a range, the total supplier output, or the total offtaker requirements of the feedstock for the eventual production of electrical power. This contract will often contain estimates of supply and demand and may require one of the parties to provide updated estimates during the term of the agreement. However, in most cases these estimates are for planning purposes only and are expressly not binding on either party. A pertinent question often asked is, if the biomass facility is bleeding cash due to the high cost of the biomass production and a good-faith decision is made to shut down operations, can the biomass facility inform the requirements seller that its requirements are now reduced to zero and inform the output buyer that its output is now reduced to zero, and then walk away? Surprisingly, the answer may be “yes,” based on judicial interpretations of section 2-306(1) of the Uniform Commercial Code (“UCC”).

Section 2-306(1) of the UCC says contracts that measure the quantity sold by either the requirements of the buyer or the output of the seller are enforceable, provided that the amount of promised product is not unreasonably disproportionate to any stated estimate or, if there is no stated estimate, to the normal supplier output or offtaker requirements. However, some courts have allowed buyers to reduce in good faith their requirements to any amount, including zero. These cases demonstrate the importance of protecting sellers by requiring minimum purchases from the buyer; otherwise, in the event of a buyer shutdown, they may find themselves without a customer and without a remedy. Similar analysis has been applied to output contracts when the seller’s output,

for good-faith reasons, drops significantly below the expected output, *i.e.*, estimates of output should not be considered a binding obligation because forcing the facility to stick to an obligation to sell the estimated amounts may compel the seller to make inefficient business decisions that were not contemplated when the contract was signed.

B. Insecurity and Grounds for Reassurance. In the past, default provisions were often not negotiated or discussed when supply and output agreements were executed. Even before default though, a buyer or seller who has reasonable grounds for insecurity is entitled to adequate assurance of performance under section 2-609 of the UCC. If one contracting party has reasonable grounds for insecurity, it may suspend performance pending assurance of performance. A failure to provide adequate assurance of performance within a reasonable time (usually 30 days or less) amounts to a repudiation of the contract, and the aggrieved party can choose to continue to wait and hope for performance or act as though the contract was breached.

Reasonable grounds for insecurity is usually a question of fact. If one party suspends its own performance because it has reasonable grounds to feel insecure, that party is still subject to the risk that its belief will be found to be unreasonable, and that party will then be in breach. It is important to note that the grounds for insecurity need not arise from circumstances directly related to the parties or the contract itself. If the market price of a commodity is rising, the buyer may be justified in seeking assurances of performance from the seller even though the seller did nothing to cause the buyer's insecurity.

Requesting adequate assurance of performance is a powerful tool because the counterparty is then in a position in which it must provide that assurance or risk having the contract be deemed anticipatorily repudiated. It also contains many traps for the unwary when used indiscriminately or when contracts are drafted without regard to its existence. The law is clearer on what will not be considered adequate assurance than on what will be. For example, when one party to a hedging contract demanded assurance that the counterparty would deliver the product, the counterparty responded by saying it would deliver "if the contract were later determined to be legal"—that is *not* adequate assurance. Also, contractual remedies may be broader than the UCC damages.

C. Attorneys' Fees Clauses. Many people insert attorneys' fees clauses into supply and offtake agreements without much thought. In some states, all attorneys' fees are automatically (regardless of the contractual terms) transformed into "prevailing party" clauses. In other words, even though the contract might say, "Seller gets attorneys' fees if it has to sue," the state law may interpret that clause to mean, "Winner gets attorneys' fees." Of course, many clauses are drafted that way anyway. If the parties omit an attorneys' fees clause, the "American rule" applicable in most states in most commercial contracts says each party bears its own fees, regardless of a win or a loss. Thus, in the absence of an attorneys' fees clause, neither party can expect the other party to pay its fees.

III. When to Involve Litigation Counsel. Frequently litigation counsel is first retained only when litigation becomes inevitable, either because a party has been sued or a dispute has reached the stage at which a party determines that a lawsuit must be filed. Involving litigation counsel before that stage is reached, however, can reap numerous benefits. Litigation counsel can advise on ADR procedures that can avoid the costs involved in litigation in state or federal court and can ensure that actions taken during the early stages of a dispute do not

prejudice any ultimate litigation. Furthermore, gaining an early understanding of the merits of any potential litigation can help resolve the dispute in an appropriate manner.

In selecting litigation counsel, a potential client should locate counsel that specializes in the types of legal issues that are involved in the dispute—environmental or technology rights, for example—and that has a deep knowledge of the industry. Retaining counsel with industry expertise can greatly increase the odds that litigation will be successfully resolved.

IV. Finding the Appropriate Forum: State and Federal Courts, Regulatory Agencies, and ADR.

A. Forum. Forum selection is critical. In disputes not involving a contract (which usually specifies the forum), the most appropriate forum depends on the contract, the issues, the amounts in dispute, and the parties. If possible, the benefits and disadvantages of each available forum should be given careful consideration before one is chosen. Options may include state or federal court, administrative litigation before various regulatory agencies, or some form of ADR, such as mediation or binding arbitration.

When a dispute involves issues of federal law or parties from different states, federal court may be an option. Given the plethora of federal and state regulatory agencies, litigation before various regulatory agencies is often a prerequisite before any litigation in state or federal court. If the dispute concerns a contractual matter, the contract will frequently specify the forum in which the litigation must be filed and which law should govern the dispute. The contract may also specify that some form of ADR must be used, either before or instead of litigation in state or federal court. Even if not required to engage in ADR pursuant to the terms of an existing contract, the parties may choose to engage in ADR after the dispute develops.

B. ADR. Experienced parties do not automatically choose court resolution or ADR for all their business relationships. Instead, they evaluate the advantages and disadvantages of each available method and choose the one that is best for them in each situation. ADR can consist of mediation and arbitration or other novel methods created by the parties. Mediation is a form of negotiation guided by a neutral mediator. Experienced parties may decide during contract negotiations to specify by name in the contract language an industry expert to serve as the mediator, should mediation become necessary. Mediators have no authority to resolve the parties' dispute. Their role is to help the parties communicate settlement offers and other information. Because the communications between a mediator and a party are not disclosed unless the party gives permission, mediators are well suited to give candid and objective assessments of each party's position in a dispute. They may also help the parties formulate a negotiation strategy that leads toward settlement.

Arbitration is a form of dispute resolution in which a private party, the arbitrator, is given authority to resolve the parties' dispute. The parties can agree to the rules governing the arbitration process, which may be similar to the rules of court governing litigation in state or federal courts. Some ADR providers (such as the American Arbitration Association) publish sets of arbitration rules.

Alternatively, a dispute resolution board ("DRB")—a panel of persons experienced in the industry—can be assembled, usually at the beginning of the parties' relationship. Its use is generally limited to major construction projects. The DRB members become familiar with the parties and the project and are available to respond to

disputes that arise. Because they are chosen by both parties for their expertise, DRB members' opinions may have considerable weight. Sometimes DRBs are given quasi-arbitral powers to decide disputes.

The chief benefit of ADR is that the parties are usually able to choose their own mediators, arbitrators, and DRB members. This gives parties the opportunity to select someone who has expertise in the industry and the issues involved in the dispute. By contrast, judges are simply assigned, giving the parties little control over who will decide the dispute.

Other aspects of ADR to consider include the parties' control over the rules of the process, which may speed a just resolution (or may deny a party a fair opportunity to present its case); the private nature of ADR proceedings, which can protect sensitive business information (or remove a threat of publicity that might make a party more willing to settle); and the finality of arbitration decisions, which saves the costs of appeal (but could leave a party disadvantaged by an erroneous decision that cannot be challenged effectively).

V. Noncontractual Disputes. Litigation may arise in a variety of areas during the development and operation of a biomass project. Like any large development project, a biomass project may generate local opposition. Although many people would welcome a biomass project as an environmentally friendly alternative energy source that can generate new local jobs, others may view the development differently. When outreach, education, and consensus-building break down, opponents of a project may resort to litigation. Litigation can lead to costly delays, and litigation strategy often focuses on allowing a project to continue development pending resolution of the claim.

A. Permitting. The permitting process provides many opportunities to challenge a project. Project opponents can delay or even prevent a project by objecting to the permitting decision, and if local opposition is particularly strong, the permitting agency may refuse to grant a permit. The permit applicant can challenge the denial of its permit through the agency's administrative appeal process, and then, if necessary, to the appropriate courts, and so can the opposition. Proper defense of a permit decision begins by actively participating in the permit process and ensuring that the local government or state agency follows all steps and has all relevant information necessary to support the grant of the permit. The decision of the permitting agency is then substantially easier to defend during the appeal process.

B. Environmental Review. Several states have broad environmental review statutes that provide fertile ground for challenges to biomass projects. For example, the California Environmental Quality Act ("CEQA") requires any governmental agency in California that makes any type of discretionary decision that potentially has an impact on the environment to conduct an environmental review and may require that an environmental impact report be prepared before approval of the project. Washington has a statute similar to CEQA, the State Environmental Policy Act ("SEPA"). Like CEQA, SEPA allows agencies to deny projects with significant unmitigated adverse impacts if feasible alternatives exist. If federal agency approval is needed, the agency itself may be required to comply with a number of federal mandates that can give rise to a potential citizen suit under the Administrative Procedure Act ("APA"). Among other federal requirements, the federal agency may need to comply with the National Environmental Policy Act, the Federal Land Policy Management Act, and the Endangered Species Act. APA cases are generally limited to reviewing the "record"—the information considered by the agency at the time it makes a decision. Consequently, the key to defending such actions is to

participate early in the decision-making process and make sure the agency's decision is adequately supported by the information in its possession. Should the agency's approval action be deemed arbitrary and capricious or otherwise contrary to law (a common litigation tactic used by citizen groups to stop or delay a project), the permit or approval may be invalidated and sent back to the agency for further consideration, resulting in substantial delay.

C. Post-Construction Challenges—Nuisance. Post-construction challengers must demonstrate that the operation of the biomass project violates some state or federal law and that a private lawsuit is authorized. Preeminent among these challenges is a common-law nuisance lawsuit on the theory that the project operator is using its land in a manner that “substantially and unreasonably” interferes with a nearby property owner's ability to “use and enjoy” his or her own property. For biomass projects, odor may be a potential issue. Plaintiffs may allege that the project creates an unreasonable amount or intensity of odor. Nuisance suits generally seek monetary damages for compensation and, in rare cases, may be awarded injunctive relief (*i.e.*, temporarily shut down the plant) to abate the nuisance.

D. Design, Engineering, and Construction Disputes. Construction contracts usually include detailed provisions allocating risks and costs during the construction process. These provisions are intended to anticipate problems and provide agreed-on resolutions so that disputes can be avoided. However, sometimes disputes arise despite the parties' best efforts. Major construction projects are complex, involving large numbers of participants and project milestone schedules possibly spanning several years, all of which generates large volumes of paperwork. Construction disputes are correspondingly complex, which makes them expensive to analyze and resolve. All parties have an incentive to avoid the expense of full-blown disputes if they can. For this reason, construction contracts should contain provisions intended to make the dispute resolution process more efficient and more predictable.

E. Insurance Coverage. Most businesses have a package of insurance policies that cover them and their employees against liability for bodily injury and property damage claims by third parties outside the organization. These policies are commonly known as comprehensive general liability (“CGL”) policies and cover the organization and its employees against claims for slander, invasion of privacy, misrepresentations, etc. CGL policies may also cover the organization for automobile liability and certain employment practices (such as employment discrimination or wrongful discharge). Insurance coverage is a valuable tool because it usually provides both defense coverage and coverage for indemnity. Often the defense coverage is not limited by the amount of insurance available to pay claims.

Property insurance can protect the business against losses to its own property from natural or unexplained causes (such as lightning, fire, flood, earthquake, or collapse) and provide indemnification against such losses. Businesses can also be covered under a third party's insurance as a result of a contractual requirement or business arrangement. Larger businesses will also typically have a form of directors' and officers' liability insurance. Other types of specialized coverage include coverage for business interruption, pollution liability, and difference in conditions.

Almost all insurance policies for business require a form of notice whenever there is a claim or a potential situation that might result in a claim. The specifics of the notice provisions must be followed carefully by the company to properly initiate the duties of the insurance carrier for the claim.

F. Intellectual Property Litigation. Biomass projects are heavily dependent on proprietary technology, patents, licenses, and trade secrets. Litigation can arise either from infringement by third parties or from the need to defend against other parties claiming infringement.

VI. Conclusion. By the time you have read to this point, you may be discouraged by all of the challenges discussed. It is important to know that most of these pitfalls can be avoided by careful drafting of the underlying contracts to the project. If a problem cannot be definitively resolved by the terms of the contract without dispute resolution, it is important that the contract's language gives the parties a clear and cost-efficient path toward the problem's resolution. If you, as the developer, go into this process with a plan for dealing with these problems, should they arise, then you will have more success with your business than those who rushed in without adequate forethought. But remember that regardless of whether the project is prospective, fledgling, or mature, teaming up with a law firm experienced in the biomass industry will provide the proper support at any stage.

Erin L. Anderson

Experience

Erin Anderson is of counsel in the Natural Resources and Land Use practice group. Erin advises clients in permitting, developing, constructing and operating major capital facilities, with a particular focus on energy generation and transmission facilities. She has significant experience representing independent power producers and regulated utilities in site certification and environmental review under NEPA, SEPA, CEQA and similar state laws, as well as operational compliance with state and federal regulations such as the Clean Water Act, Clean Air Act and Endangered Species Act. She regularly represents clients before local boards, commissions and the Washington Energy Facility Site Evaluation Council in project permit proceedings, and has successfully defended projects before the Eastern Washington Growth Management Hearings Board, and in Washington's Superior Courts, Court of Appeals and the Washington Supreme Court. Erin also conducts regulatory, environmental and land use due diligence for purchasers, sellers and lenders in major power facility transactions.

Erin also advises private-sector and municipal interests in the negotiation and drafting of franchise and development agreements for multiple-use developments, water and wastewater treatment plant development and utility service delivery contracts, and frequently advises public and private clients on matters of eminent domain, regulatory takings, alternate procurements and the drafting and negotiation of both traditional design-bid-build and alternate public-private partnership agreements.

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, represented the Kittitas County Public Utilities District, the Kittitas County Conservation District, Kittitas County Fire District #4, and served as the South Cle Elum town attorney. 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.

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Eric Bartsch has handled a broad range of civil litigation matters implicating liability for unlawful competition, trade secret misappropriation, business and securities fraud, and remedies under the Uniform Commercial Code.

Eric was formerly a partner at Lindquist & Vennum, P.L.L.P. (2000-07) and Rider, Bennett, Egan & Arundel (1998-2000), and he was a Special Assistant Ramsey County Attorney in the Felony Drug Unit (1994).

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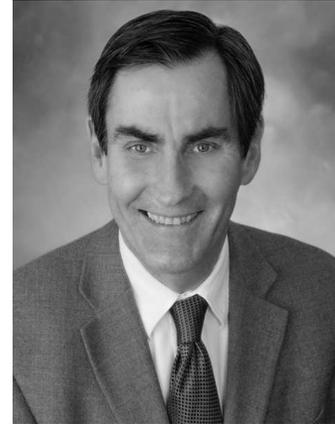
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Kevin J. Beaton

Experience

Kevin Beaton is a partner of the firm practicing in the areas of environmental, administrative, and natural resources law with an emphasis on water quality, Clean Water Act permitting, Endangered Species Act consultations, water rights and related federal and state environmental enforcement actions. He represents industrial clients, municipalities and energy companies on a variety of water quality matters including NPDES permits, TMDLs, 401 certifications and development of water quality standards and regulations.

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Jennie Bricker is a partner and practices natural resources law, with a focus on water law, waterways, and wetlands. Recognized as one of the state's experts on navigability for title, Jennie advises riparian property owners about their rights to submerged and submersible lands on Oregon waterways. She also assists clients in obtaining permits under Clean Water Act Section 404 and the Oregon Removal-Fill Law.

Law clerk, the Honorable Otto R. Skopil, Jr., Ninth Circuit Court of Appeals (1997-98); legal systems administrator (1994-1997), editor (1992-1994), Dark Horse Comics, Inc.; assistant editor, Spectroscopy magazine (1991-1992); lecturer in English, University of Maryland, European Division (1989-1990); Graduate Teaching Fellow in women's studies, University of Oregon (1986-1988).

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Matthew Cohen

Experience

Matthew Cohen is a partner of the firm practicing in the Environment, Land Use and Natural Resources practice group. He represents industries, electric utilities and trade associations in legislative, rulemaking, permitting and enforcement matters arising under state and federal environmental laws. Since 1990, Matt has represented industries and trade associations in the development of state rules to implement the 1990 Clean Air Act Amendments. He has served on Washington and Alaska advisory committees created to guide state agencies in the development of air regulations, currently including a Washington advisory committee established to draft greenhouse gas reporting rules. He supports clients applying for NPDES permits, Title V air operating permits and Prevention of Significant Deterioration permits for complex industrial facilities and represents clients facing enforcement proceedings and citizen suit litigation.

Matt also represents non-profit organizations and local governments seeking to develop bicycle trails on inactive railroad rights-of-way. He represented the Rails-to-Trails conservancy in *Dave v. Rails-to-Trails Conservancy*, 79 F.3d 940 (9th Cir. 1996), a Fifth Amendment takings claim, and recently assisted King County, Washington, in efforts to acquire a 47-mile railroad right-of-way in the east suburbs of Seattle.

Before joining Stoel Rives, Matt was an attorney with Heller Ehrman LLP (1983-2008), an attorney with Mundt, MacGregor, Happel, Falconer & Zulauf (1980-1983), and law clerk to Chief Justice Arno H. Denecke of the Oregon Supreme Court (1979-1980).

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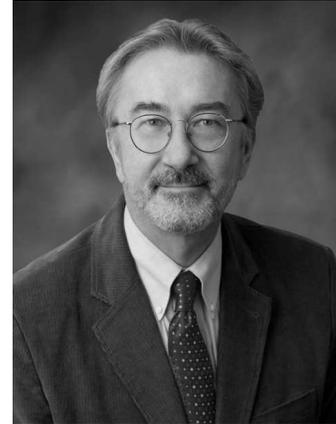
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Edward D. Einowski

Experience

Ed Einowski is a partner at Stoel Rives LLP where he specializes in renewable energy project finance and development. He was selected as a "Leader in the Field" by *Chambers Global* (Projects: Renewables & Alternative Energy - USA), 2011 and is listed in *Best Lawyers in America*® and ranked among leading renewable energy attorneys by *Chambers USA* and *Chambers Global*. *Chambers* describes him as a lawyer who combines "*a great knowledge of the law with a practical and efficient approach.*" He represents developers (including biomass, wind, solar, hydro and geothermal), primary investors, tax-equity investors, biofuel producers, investment banking firms, commercial banks and other financial institutions. He has handled project financings and related work throughout the United States, from West Virginia to California. He frequently publishes articles on renewable energy and is a prominent speaker at renewable energy conferences in the United States and internationally.

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Experience

Richard Hall's practice focuses on real estate, natural resources and energy law. He regularly represents clients in matters relating to land and energy development, mining, water rights, and public lands law.

Richard's real estate experience includes the purchase, sale and leasing of properties for residential, commercial, industrial and energy development. This real estate work includes the transaction due diligence, including title and permitting review, as well as the acquisition of land use entitlements.

Richard assists clients with natural resource and energy development, including both conventional and renewable energy projects. His past experience as a civil engineer for an electrical utility allows him to combine his legal experience with a technical understanding of resource and energy development projects. He represents mining and energy clients in structuring and negotiating land acquisition and lease agreements, as well as permitting projects on public and private lands. Richard assists in the attainment of land use entitlements and project compliance with federal, state and local regulations. He also regularly handles water rights matters in Utah, Idaho, Wyoming and Montana.

Richard represents clients before various federal, state and local regulatory, land use and resource management agencies, including the Bureau of Land Management, U.S. Forest Service, U.S. Environmental Protection Agency, and various state environmental quality, state trust lands and water rights agencies, as well as public utility commissions.

He also has extensive experience in land title matters. In addition to general title review conducted in conjunction with real estate acquisitions, Richard's experience includes the preparation of numerous mineral title opinions for mining and oil/gas operators in several states.

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Teresa A. Hill

Experience

Teresa Hill is a partner in the firm's Environment, Land Use and Natural Resources group and the Renewable Energy group. Teresa practices in the areas of renewable energy, land use, natural resources and environmental law. Her practice encompasses a wide range of energy, development and environmental work, including the representation of renewable energy developers in drafting and negotiating power purchase agreements, obtaining environmental and land use approvals, conducting due diligence reviews, providing legal opinions, representing clients before administrative agencies and assisting clients with environmental compliance and permitting.

Teresa has represented renewable energy clients in analyzing and advising on RFOs/RFPs and negotiations with a range of entities, including municipalities and small and large utilities, specifically: Bonneville Power Administration (BPA), Puget Sound Energy, Inc., Snohomish PUD (SnoPUD), Salt River Project Agricultural Improvement and Power District (SRP), Southern California Edison (SCE), Pacific Gas & Electric (PG&E), Missouri River Energy Services, Minnesota Power, Idaho Power Company, Northern Indiana Public Service Co. (NIPSCO) and Wisconsin Public Power Inc.

Prior to joining Stoel Rives, Teresa served as judicial clerk to the Honorable Chief Justice Linda Copple Trout of the Idaho Supreme Court (2000-2001). She was also a summer associate at Stoel Rives LLP (1999) and Ray, Quinney & Nebeker (1998).

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- Idaho
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William H. Holmes

Experience

Bill Holmes is a partner of the firm and immediate past chair of the renewable energy initiative. Bill concentrates his practice in the area of energy law, with a special emphasis on wind, geothermal, biomass, tidal and ocean power, and other forms of renewable energy. He also has extensive experience with real estate law, water law, and general corporate transactions.

Bill represents clients in the negotiation of major power purchase agreements on both the "buy" and the "sell" sides. This experience includes work on numerous major wind and renewable energy power purchase agreements.

Bill also advises clients in the negotiation of acquisition agreements for energy assets and companies, EPC agreements, O&M agreements, management agreements, LLC agreements, energy project development agreements, fuel supply agreements, and related documentation. He has represented renewable energy clients in negotiations with a range of counterparties, including Idaho Power, PacifiCorp, Pacific Gas & Electric (PG&E), Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), Snohomish PUD (SnoPUD), Sacramento Municipal Utility District (SMUD), Public Service Company of Colorado (PSCO), Kansas City Power & Light, and Southern California Public Power Authority (SCPPA).

Bill joined Stoel Rives as an associate in 1985 and has been a member of the firm since 1992. Before joining the firm, he served as law clerk to Judge Louis F. Oberdorfer, United States District Court for the District of Columbia (1984-1985).

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- University of Texas, B.A. Plan II honors program, 1981, with highest honors
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Admissions

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Gregory F. Jenner

Experience

Greg Jenner is a partner in the Tax practice group. Before returning to Stoel Rives in 2008, Greg served as both Acting Assistant Secretary of the U.S. Treasury for Tax Policy (2004) and Deputy Assistant Secretary for Tax Policy (2002-2004). As Acting Assistant Secretary, Greg directed the Treasury's Office of Tax Policy, which is responsible for providing the Administration with policy analysis, advice and recommendations relating to all aspects of domestic and international issues of federal taxation, including all legislative proposals, regulatory guidance and tax treaties. The Office of Tax Policy is also responsible for providing the official estimates of all federal government receipts for the President's budget, fiscal policy decisions and Treasury cash management decisions.

Greg has broad experience in virtually all federal tax matters, with particular focus on planning and implementing complex tax-related transactions, partnerships and joint ventures, and mergers and acquisitions. He has worked extensively on energy-and insurance-related tax issues, and has successfully represented taxpayers in federal and state tax controversies, in both audit and litigation. At Stoel Rives, Greg has increasingly focused on planning for renewable energy projects, particularly the incentives enacted as part of the American Recovery and Reinvestment Act of 2009. Greg is a frequent speaker on renewable energy tax planning, agriculture tax issues, and tax and budget policy.

In addition to his most recent service at Treasury, Greg has been active for many years in the federal tax policy process. Prior to his 10 years in private practice from 1992 to 2002, Greg served as Special Assistant to the Assistant Secretary of the Treasury (Tax Policy) (1989-1992). He also served as Tax Counsel for the U.S. Senate Committee on Finance (1985-1989), where he was proud to help write the Tax Reform Act of 1986.

To learn more, please visit: http://www.stoel.com/greg_jenner



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Education

- New York University School of Law, J.D., 1979, *cum laude*
Law Review Note and Comment Editor
Order of the Coif
- Portland State University
B.S., 1975, with highest honors

Admissions

- Minnesota
- District of Columbia
- U.S. Tax Court
- U.S. District Court for the District of Minnesota

Jason A. Johns

Experience

Jason Johns is an associate in the Energy Development group where he focuses his practice on energy regulation before the Federal Energy Regulatory Commission (FERC) and state utility commissions, electric reliability issues, transmission development and policy, and natural gas transportation and distribution agreements. His clients include owners, investors and developers throughout the energy industry, with particular emphasis on the wind, natural gas, solar, geothermal, biomass and hydropower sectors. Jason has worked on wind integration rate cases in the Pacific Northwest, and he also has significant experience in drafting and negotiating power purchase agreements. In addition, Jason is registered as a patent attorney before the U.S. Patent and Trademark Office and his work with energy clients is informed by his passion for chemistry, physics, and engineering.

Recently, Jason co-authored two white papers for the Energy Foundation, a partnership of major foundations interested in sustainable energy. The white papers discuss potential solutions to the barriers to transmission development in the Western Interconnection, and Jason spoke on this topic to energy industry and political leaders at the 2010 annual meeting of the Western Governors' Association.

Prior to his legal career, Jason worked as a pharmaceutical chemist specializing in the purification and development of synthetic adjuvants—pharmacological agents that modify the immune system's response to a vaccine. As a chemist, Jason also assisted a non-profit effort led by the Bill and Melinda Gates Foundation to develop a method for purifying a vaccine used to treat leishmaniasis, a disease particularly prevalent in developing countries.

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Education

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

Admissions

- Oregon
- U.S. Patent and Trademark Office

Kevin D. Johnson

Experience

Kevin Johnson is a partner practicing in the Environment, Land Use and Natural Resources group, and is the office managing partner of the firm's Minneapolis office. Kevin focuses on the areas of environmental, energy, land use, agricultural and municipal law. He advises and represents companies, local governments and individuals on such issues as development, siting and financing of major facilities; environmental regulatory compliance; federal, state and local permitting and licensing; resolution of and funding for property contamination issues; and corporate, limited liability, cooperative and joint powers board formation and finance.

Kevin has extensive experience assisting clients in resolving legal issues related to renewable energy projects, including biomass (waste-to-energy) facilities, biofuels (ethanol and biodiesel) facilities and wind energy projects. He is also a regular presenter at various seminars on environmental compliance and development and permitting of renewable energy facilities.

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Education

- William Mitchell College of Law, J.D., 1993
- Hamline University, M.A., 1989
- University of Minnesota, B.A., 1983

Admissions

- Minnesota

Quentin M. Knipe

Experience

Quentin Knipe practices in the firm's Real Estate and Construction group. He handles real estate transactions, land use entitlements and construction contracts. His real estate work involves handling purchases, sales and leases of commercial property and residential developments; conducting due diligence reviews; and assisting both borrowers and lenders with real estate-secured financing. His development work involves pursuing government permits, approvals and entitlements, and negotiating and drafting construction contracts, development agreements, restrictive covenants, easements and maintenance agreements. He also assists real estate developers and investors with the formation of joint ventures and business entities.

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Education

- University of Washington School of Law, J.D., 1989, with honors
- Lewis & Clark College, B.S., Economics and Business Administration, 1986, with honors

Admissions

- Idaho
- Washington

Adam C. Kobos

Experience

Adam Kobos is a partner in the Tax section of the firm's Benefits, Tax and Wealth Management 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.

To learn more, please visit: http://www.stoel.com/adam_kobos



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Education

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

Admissions

- Oregon
- California
- U.S. Tax Court

Charles S. Lewis, III

Experience

Carl Lewis is a partner 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 Tax Counsel for the firm.

To learn more, please visit: http://www.stoel.com/carl_lewis



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Education

- Willamette University College of Law, J.D., 1978, *magna cum laude*
CJS Award (1976-1978)
- 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

Robert T. Manicke

Experience

Robert Manicke practices in the firm's Portland office. He is the firm's lead partner 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. Robert also represents health care clients in matters relating to tax exemption, employment tax and insurance tax.

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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

Eric L. Martin

Experience

Eric Martin concentrates his legal practice in the areas of permitting and natural resource development. He helps clients obtain the property rights and secure the local, state and federal permits needed to implement their development projects. Eric's experience includes representing clients before local governing bodies, the Oregon Land Use Board of Appeals and the Oregon Court of Appeals.

Prior to law school, Eric taught English as a Peace Corps volunteer in Targu Ocna, Romania (2003-2005) and worked at Historic Boston Incorporated, a historic preservation revolving fund and advocacy organization (2002-2003).

To learn more, please visit: http://www.stoel.com/eric_martin



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Education

- Stanford Law School, J.D., 2008
Associate Managing Editor, *Stanford Law and Policy Review*
- University of Vermont, M.S., 2003,
historic preservation
- Gustavus Adolphus College, B.A.,
2000, *summa cum laude*
Phi Beta Kappa

Admissions

- Oregon

Jennifer H. Martin

Experience

Jennifer Martin is a partner 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 the Tennessee Valley Authority (TVA), 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.

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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

J. Mark Morford

Experience

With more than 25 years of experience as an environmental attorney, Mark is one of the most experienced and respected environmental attorneys in Oregon. He has in-depth experience with the full range of environmental issues that face industrial, energy, forest products and agricultural facilities, including water quality, air quality, waste management, radioactive materials management, endangered species issues and cleanups. Mark is comfortable with engineering and scientific detail and typically serves in a role where he helps integrate technical, business, public relations and legal issues into an overall strategy for solving complex problems.

Mark regularly assists clients with complex regulatory compliance and permitting. Drawing on his broad experience, Mark assists clients in developing corporate strategies for meeting environmental obligations with limited resources. He also advises clients on managing and allocating environmental risks in business transactions. Mark works closely with regulatory agencies and trade organizations in the development of sensible and responsible environmental laws. He authored key portions of the current Oregon Cleanup Law and has significantly influenced Oregon statutes and regulations regarding waste management, air quality and water quality.

To learn more, please visit: http://www.stoel.com/mark_morford



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Education

- University of Virginia, J.D., 1983
- Georgia Institute of Technology, B.S., 1980, highest honors

Admissions

- Oregon

Karl F. Oles

Experience

Karl Oles is a partner of the firm practicing in the Real Estate and Construction 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 multimillion-dollar design and construction contracts on a wide variety of projects, including alternative energy projects.

To learn more, please visit: http://www.stoel.com/karl_oles



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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
- U.S. Court of Appeals for the Ninth Circuit

Kevin T. Pearson

Experience

Kevin is a partner of the firm practicing in the Tax section of the firm's Benefits, Tax and Wealth Management 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. Kevin frequently represents clients in renewable energy financing transactions, particularly those involving the federal production tax credit. In addition, Kevin advises both taxable and tax-exempt health care clients with respect to all types of tax, business and financial matters. 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.

To learn more, please visit: http://www.stoel.com/kevin_pearson



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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

David T. Quinby

Experience

David Quinby is the Chair of firm's Energy Initiative. He previously served as the Minneapolis office managing partner (2007-2010), and currently works out of the firm's Minneapolis and San Diego offices. David concentrates his practice on corporate, securities, project development and finance, and merger and acquisition matters, with a particular focus on energy and clean technology clients. He has worked with early stage developers and startups, major wind, solar and biomass companies, traditional power companies and investors in such companies. He advises clients with respect to purchase and sale agreements, wind leases, feedstock and fuel supply agreements, off-take and power purchase agreements, EPC agreements, O&M agreements, private placement memorandums, venture capital investments, joint venture agreements, development agreements and related documentation.

David also has extensive experience representing public and private companies as both in-house and outside counsel, and has led numerous negotiations on complex transactions. Previously, David served as assistant general counsel at NRG Energy, Inc., a NYSE company, and as general counsel for NRG's \$1.5 billion North American operating unit. Before joining NRG, David served as vice president, general counsel, and secretary of ValueVision International, Inc., a NASDAQ-listed direct marketing and home shopping company. David is also a CPA with four years of public accounting experience.

To learn more, please visit: http://www.stoel.com/david_quinby



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Education

- University of Minnesota Law School, J.D., 1990, *magna cum laude*
Order of the Coif
Law Review
- Luther College, B.A., 1983, *magna cum laude*
Phi Beta Kappa

Admissions

- California
- Minnesota

Joe R. Thompson

Experience

Joe Thompson counsels agribusiness, food processing, renewable energy and other clients on joint ventures, mergers, acquisitions, divestitures, and related commercial transactions. He has particular experience with strategic business entity structuring and restructuring, project development matters, private and public equity capitalization, debt financing, and co-packing, supply and tolling agreements.

Joe grew up working in his family's farming and trucking businesses and was a leader in his local FFA chapter. Prior to his law career, he spent three years working in the credit industry as an analyst and work-out specialist. These prior experiences have given Joe an enduring appreciation of the needs and challenges of business owners. He draws on this perspective to provide creative, yet practical, legal solutions to his clients.

Joe currently chairs the Agribusiness and Food Initiative at Stoel Rives.

To learn more, please visit: http://www.stoel.com/joe_thompson



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Education

- University of Iowa College of Law, J.D., 1998, with distinction
- Iowa State University, B.S., Agricultural Business, 1993, with distinction

Admissions

- Minnesota
- Iowa

John R. Thompson

Experience

John R. Thompson is a partner of the firm practicing in the Technology and Intellectual Property section. He focuses his practice on electrical, computer and software patent preparation and prosecution in the United States and in foreign countries. John counsels clients on patent matters, including patentability, validity, and infringement, and on strategic intellectual property planning. John also assists with trademark prosecution, which includes protecting marks and domain names, and obtaining registrations.

While at Arizona State University, John worked as an intern on the telemetry systems of the space shuttle's rocket boosters. Following graduation, he accepted a position with Arizona Public Service as a design engineer in the instrument and control division of the Palo Verde Nuclear Generating Station.

Prior to joining Stoel Rives, John was a shareholder (2001-2002) and associate (1995-2000) at Madson & Metcalf, Salt Lake City, Utah.

To learn more, please visit: http://www.stoel.com/john_thompson



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Education

- Northwestern School of Law at Lewis and Clark College, J.D., 1995, *magna cum laude*
Associate editor, *Northwestern Law Review*, 1994
- Arizona State University, B.S., 1990, electrical engineering

Admissions

- Utah
- Colorado
- Washington
- U.S. Patent & Trademark Office

Languages

- Italian

Marcus Wood

Experience

Marcus Wood is a partner and Chair of the Energy Development practice group. He focuses his practice on energy provider and energy facility developer clients. Marcus has extensive experience representing independent power company owners of conventional and renewable energy projects, as well as regulated electric, natural gas and water utilities. He practices before the Federal Energy Regulatory Commission and before utility regulatory bodies in the states of Oregon, Washington, California, Idaho and Wyoming, in investigations and in rate proceedings, and has been a leader in efforts to create Regional Transmission Organizations.

Marcus has represented numerous parties in the acquisition and financing of interests in, and in the disposition of, the output from cogeneration and other conventional electric generation facilities, as well as wind-powered and geothermal energy resources. He regularly assists clients on the structuring of energy projects and the operating contracts, power sales contracts and transmission contracts required for such projects. He also has extensive experience advising sellers, purchasers and exchangers of electric capacity and energy, as well as advising both transmission service providers and purchasers of electric transmission and related services.

To learn more, please visit: http://www.stoel.com/marcus_wood



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Education

- Yale University Law School, J.D., 1974
- Vanderbilt University, B.A., 1969, *cum laude*
Phi Beta Kappa

Admissions

- State bar of Oregon
- U.S. District Court
- U.S. Court of Appeals for the Ninth Circuit
- U.S. Court of Appeals for the District of Columbia Circuit

Thomas R. Wood

Experience

Tom Wood is a partner of the firm practicing in the area of environmental law. He has significant experience in the areas of air quality and hazardous waste permitting and compliance. Tom has counseled some of the leading industries in the United States on environmental permitting issues, commercial transactions and the interrelationships between the two. Tom also has extensive background in defending criminal and civil environmental enforcement actions including citizen suits and civil nuisance actions. Permitting and compliance projects have included work in the power generation, biofuels, primary metals, semiconductor, motor vehicle manufacturing, wood products, chemicals and oil and gas industries. These projects involved a wide variety of issues including new source review, Title V permitting, Title IV (acid rain) compliance, visibility requirements, air toxics and hazardous air pollutant regulations and RCRA air emission standards. Tom is the author of numerous articles on environmental issues and is a frequent lecturer on these topics.

While in law school Tom clerked with the U.S. Attorneys Office for the Eastern District of New York and was a judicial intern for the Honorable Judge Carol B. Amon, Eastern District of New York.

To learn more, please visit: http://www.stoel.com/tom_wood



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Education

- Columbia Law School, J.D., 1993
Stone Scholar
- Stanford University, B.A., 1983, with
distinction

Admissions

- Oregon
- Washington



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 client 3Degrees. 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.



The Law Of BIOMASS

A Guide to Business and Legal Issues



STOEL
RIVES
LLP
ATTORNEYS AT LAW

The Law of Biomass will be updated periodically, but to stay informed of developments in the 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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