THE LAW OF BIOMASS
—Power Purchase Agreements and Environmental Attributes—

William H. Holmes
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9207 (Portland)
612-373-8817 (Minneapolis)
whholmes@stoel.com

Jennifer H. Martin
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9852
jhmartin@stoel.com

Teresa A. Hill
Stoel Rives LLP
101 S Capitol Blvd, Suite 1900
Boise, ID 83702-7705
208-387-4264
tahill@stoel.com

Edward D. Einowski
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9235
eeinowski@stoel.com

Marcus A. Wood
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9434
mwood@stoel.com

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 built 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

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

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 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.

[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.

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,

[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.

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.

- 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

[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.

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 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 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

[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.

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.