THE LAW OF BIOMASS
—Biomass Supply Issues and Agreements—

John M. Eustermann
Stoel Rives LLP
101 S Capitol Blvd, Suite 1900
Boise, ID 82702-7705
208-387-4218
jmeustermann@stoel.com

Joe R. Thompson
Stoel Rives LLP
33 South Sixth Street, Suite 4200
Minneapolis, MN 55402
612-373-8822
jthompson@stoel.com

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.