THE LAW OF ALGAE
—Important Elements of an Algae Biofuels Project: Water, Light, and Land—

Laura E. Suesser
Stoel Rives LLP
201 S Main Street, Suite 1100
Salt Lake City, UT 84111-4904
801-578-6945
lasuesser@stoel.com

Three key elements for a typical algae biofuels project are water, light, and land. An algae biofuels project may utilize these resources in different ways, depending on the methods used to cultivate the algae. The temperature and climate of the project location will impact decisions relating to the type of cultivation system to use.

I. Water. Water requirements for algae biofuels projects require careful consideration and planning. Algae can grow in almost any type water, including fresh, salt, brackish, and industrial waste water. Algae production facilities use ponds, tanks or tubes to grow the algae. A project developer will want to consider the water resource or resources available for the project when determining the algae strain or strains that will be utilized. Algae production systems, especially closed systems, may be able to recycle the water used in the production process.

Water Supply. Water supply for an algae biofuels project is crucial, as water is used in both the cultivation of algae as well as the processing of the algae oil into biodiesel. When a project is located in a semi-dessert or desert environment, water may be scarce or severely limited. Savvy project developers should give early and careful consideration to potential sources of water. A few of the critical questions to ask include:

- Is there a source of water on the project site - a surface source (such as a river or canal), a municipal source, or a groundwater well?
- If there is no surface source on the site, is water available from an aquifer or from a local source?
- Of the water sources that are available is the water quality suitable for algae production?
- What water laws and restrictions will affect the ability to obtain water for the project?
- If a well or surface diversion is required to bring water to the project, what water rights or licenses are needed and how much time is needed to obtain those rights?

The chemical makeup of the water supply is critical to two types of algae being produced. The water quality must meet growth criteria and meet state and federal criteria if eventually discharged to other waters or to publicly owned treatment works for eventual disposal. In some instances, project wastewater with minimal contaminants can be evaporated in adequate ponds. Rural or remote project sites must consider the energy costs for pumping or transporting well or surface water or wastewater for treatment.

Water Discharge. In addition to NPEDS permits in many states, any water discharge with the potential to affect surface or groundwater is required to be permitted. In most states federal Clean Water Act permitting authority is administered by state environmental agencies. For water permits outside of federal jurisdiction, 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 deeper than they are wide potentially require separate permitting as underground injection wells. When project 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 National Point Discharge Elimination System ("NPDES") permit is typically required. The NPDES 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). The NPDES permit may fit within the terms of a general permit (such as

for stormwater), in which case permit coverage can be assigned by request. 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 additional consideration for an algae biofuels facility is whether the facility will use genetically modified algae and restrictions on discharge. Genetically modified algae that enters the water system could impact the natural eco-system, and thus there is concern about containment of the genetically modified algae. If a facility uses genetically modified algae, it is extremely important to review the local water laws and restrictions relating to genetically modified organisms. Some states require permits before genetically modified algae can be susceptible to discharge. In those states, pond systems may need to obtain permits prior to operation. Discharge from closed systems to publicly owned treatment works may also require a permit.

II. Access to Light. Most strains of algae require light to grow. Some algae production facilities may use artificial light sources like a photo bioreactor. The developer of the algae biofuels project relying on natural sunlight will need to ensure that the facility has access to sunlight for growing algae. The developer may want to consider entering into solar easement agreement with adjoining properties that, like any other property right, must be documented in writing and recorded in accordance with local requirements.

To be enforceable, an agreement creating a solar easement must also contain any state-specific requirements. A state's focus may be affected by weather, terrain, or the character of the area. Some states and/or local governing bodies can be height- or design-sensitive (California, Colorado) or locale-sensitive (Hawaii), or may focus on visibility and placement (North Carolina), orientation (Wisconsin), zoning (Rhode Island), or setback issues (Oregon).

III. Land Ownership and Use. The simplest form of property use rights is to own the real property on which the algae biofuels facility will be constructed. The developer, once a site is determined, will typically enter into a purchase and sale agreement or an option to purchase the site. A purchase and sale agreement should include the purchase price, closing date, closing contingencies and deliveries, representations and warranties, indemnification, and other material terms of the purchase. An option to purchase may be contained in a stand-alone document or incorporated in a ground lease (discussed below); in either case it should be recorded in the appropriate jurisdiction's (county's) real property records. An option may also be structured as either a simple option to purchase or a right of first refusal should another party desire to purchase the same site. Rather than an immediate purchase of the real property on which the facility will be constructed, the developer may acquire an option to purchase the property at a future date.

In a simple option to purchase, the developer acquires the right to purchase the real property from the owner for a specified price during a defined term. Typically, an option "premium" or fee will be paid by the developer at the time the option is entered into. The option agreement should define, in as much detail as possible, the term of the option, the manner in which the option may be exercised, the purchase price, and the method of paying the purchase price. If the purchase price is not fixed at the time the option is entered into, it is advisable to base the purchase price on the fair market value of the property, as determined by an independent appraisal. As an alternative, the purchase price may be a fixed amount that is adjusted based on a yearly consumer price index.

IV. Ground Leases. If the developer does not purchase the real property on which the algae biofuels facility will be constructed, the developer will typically enter into an agreement to use the property for the project (a "ground lease") with the owner. If the property has already been developed, demolition of the current

improvements may be necessary. This section provides a brief description of issues that the developer should consider in negotiating a ground lease for the construction of a facility.

A. Term. A ground lease will frequently have a relatively lengthy term (*e.g.,* 20-50 years). In negotiating the term of a ground lease, the developer should consider including options to extend the term of the lease and to use other real property adjacent to the facility (if such use becomes necessary and such property is available). In some midwestern states leases of agricultural land for more than ten or twenty years are prohibited by statute and constitution and care must be used in structuring an appropriate land use agreement.

B. Use. The "permitted use" for the property should be broad enough to allow the developer to construct, maintain, and operate the algae biofuels facility in a practical and flexible manner. The owner will frequently propose that certain activities not be conducted on the premises, such as illegal or hazardous activities. Any proposed restrictions should be reviewed to ensure they do not restrict the developer from constructing and operating the facility or carrying out any future plans.

C. Lender Protection Provisions. The vast majority of projects need financing from a commercial bank or other third party to finance the construction of the facility. Most lenders will demand extensive protective provisions in the loan documents before agreeing to lend with only the ground lease as collateral. The developer should do its best to anticipate what protections will be requested (or demanded) and obtain the landlord's consent proactively to modify the lease to incorporate the lender protection provisions. The right to mortgage or otherwise encumber the leasehold interest should be included in the ground lease.

D. Access and Interference by the Owner. A ground lease will frequently permit the owner to enter onto and inspect the premises. The developer should consider limiting the owner's access to the premises, however, because it may be dangerous for the owner to enter onto the premises unexpectedly. An algae biofuels facility will also want to maintain biosecurity precautions with all visitors, including the owner. Accordingly, the owner's access rights should be limited to defined times and purposes and should require prior notice to the developer.

E. Rent. Rent under a ground lease may be payable monthly, yearly, or in other intervals. Rent may be a fixed amount or a variable amount (*e.g.,* based on a percentage of the developer's sales or gross revenues). The developer should determine which schedule and method for determining the amount of rent is appropriate. In addition to basic rent, the developer will typically be responsible for all construction, maintenance, and insurance costs associated with the facility and all utilities and real estate taxes. If the facility is constructed on property where common areas are shared with other tenants, common area charges may also be included in the rent.

F. Construction. A ground lease will frequently contain construction criteria and standards, and will often provide the owner with the right to approve various stages of the construction. The ground lease should provide the developer with the maximum amount of flexibility in constructing the facility and should limit, to the extent possible, the owner's right to approve the construction of the facility. After the construction of the facility is complete, the developer should also have the ability to maintain, alter, or modify the facility at its discretion without the consent of the owner.

G. Condemnation. It is always possible that a governmental entity with the power of eminent domain could condemn the real property on which the facility is being constructed. Upon condemnation, the owner will be awarded the fair market value of the real property, including the value of any improvements. The developer should insist that the ground lease specify that the portion of the condemnation award related to the

facility or other improvements will be paid to the developer. In addition, the developer should be compensated for the value of the remaining term of the ground lease.

H. Site Security. If the owner is to provide a secure premises for the construction of the facility, the ground lease should specify the owner's duties in this regard. The developer should also consider including the right to build a fence around the facility and to monitor access by the owner or third parties.

I. Insurance. The ground lease may require the developer to maintain general liability insurance and possibly all-risk property insurance for the full replacement value of the facility. The amount of this required insurance should be reviewed with the developer's insurance company. If the facility is constructed on property where common areas are shared with other tenants, the ground lease should specify that the owner will be responsible for maintaining the requisite insurance for the common areas.

J. Assignment and Subletting. A ground lease will frequently restrict the developer from assigning or subletting the facility without the consent of the owner. The developer should consider negotiating exceptions, such as permitting an assignment or sublease to a financially sound tenant. In addition, if a corporate restructuring of the developer is a realistic possibility, the developer should have the right to assign the ground lease to an affiliate of the developer without the consent of the owner. As a general rule, an assignment or sublease will not relieve the developer of its obligations to the owner under the terms of the ground lease.

K. Environmental Issues. The ground lease should include representations by the owner that there are no environmental liabilities existing on the real property. The ground lease will require the developer to agree that it will not violate environmental laws or use hazardous substances in a manner that is inconsistent with environmental laws. The ground lease should not, however, completely prohibit the use of hazardous substances on the property (provided the use does not violate environmental laws or regulations).

L. Title. The ground lease should require the owner to deliver a title insurance policy insuring the leasehold interest in the property. Title to the facility and all other improvements constructed on the property should remain vested in the developer throughout the term of the ground lease. At the end of the lease term, the developer should have the right to remove the facility and all other improvements from the property. In the alternative, the developer may reserve the right to demolish the facility at the end of the lease term.

M. Indemnification. The ground lease will typically require the developer to indemnify the owner for any loss or injury suffered by the owner in connection with the developer's use of the property. The ground lease also should require the owner to indemnify the developer against any injury or loss suffered by the developer in connection with the owner's entry onto the property.