

THE LAW OF BIOMASS
—Siting and Permitting Projects—

Erin L. Anderson
Stoel Rives LLP
600 University Street, Suite 3600
Seattle, WA 98101-4109
206-386-7665
elanderson@stoel.com

Jennie L. Bricker
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9631
jlbricker@stoel.com

Kevin D. Johnson
Stoel Rives LLP
33 South Sixth Street, Suite 4200
Minneapolis, MN 55402
612-373-8803
kdjohnson@stoel.com

J. Mark Morford
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9259
jmmorford@stoel.com

Thomas R. Wood
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9396
trwood@stoel.com

Kevin J. Beaton
Stoel Rives LLP
101 S Capitol Blvd, Suite 1900
Boise, ID 83702-7705
208-387-4214
kjbeaton@stoel.com

Matthew Cohen
Stoel Rives LLP
600 University Street, Suite 3600
Seattle, WA 98101-4109
206-386-7569
mcohen@stoel.com

Eric L. Martin
Stoel Rives LLP
900 SW Fifth Avenue, Suite 2600
Portland, OR 97204-1268
503-294-9593
elmartin@stoel.com

Lee N. Smith
Stoel Rives LLP
500 Capitol Mall, Suite 1600
Sacramento, CA 95814-3361
916-319-4651
lnsmith@stoel.com

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 A project in the Midwest was recently withdrawn because of the project proponent's failure to locate the project near a railroad line needed to provide delivery of a feedstock.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