

LAW OF BIOFUELS
Setting Up Shop:
—Design, Engineering and Construction
for Biofuels Plants—

Alan R. Merkle
Stoel Rives LLP
600 University Street, Suite 3600
Seattle, WA 98101
206-386-7636
armerkle@stoel.com

Karl F. Oles
Stoel Rives LLP
600 University Street, Suite 3600
Seattle, WA 98101
206-386-7535
kfoles@stoel.com

This chapter provides an overview of the contractual structures that often apply to the construction of biofuels (ethanol and biodiesel) production plants, including design and engineering, procurement, and construction agreements and related technology licensing agreements, as well as the construction of ancillary facilities such as cogeneration plants. This overview is written from the perspective of a biofuels project developer; however, the information set forth below should interest design and engineering, construction, and procurement contractors as well. As with any complex negotiated transaction, there is a large amount of value to be won or lost by all parties, and often the potential exists for using creative legal strategies to increase value on both sides of the table.

Construction-Related Agreements. Critical to the actual development of any biofuels project are the various agreements that a project developer must enter into in relation to:

- design and engineering;
- procurement of necessary equipment (tanks, pumps, piping and related components) and materials to construct “balance-of-plant” facilities such as conveying systems for the distiller grain (DDGS), rail spurs for supply and offtake deliveries, grain storage areas, oil storage tanks, foundations, roads and related maintenance facilities;
- obtaining construction, installation and balance-of-plant services necessary to install the cogeneration facilities (if necessary); and
- performance guarantees, warranty and insurance arrangements set forth in the agreements.

Engineering, procurement and construction agreements are often collectively referred to as “EPC agreements.”

There are occasions when the design and engineering, procurement, and construction/erection services are addressed in a single agreement (“full-wrap agreement”), usually when there is a single general contractor for the project. These types of agreements are more common than separate agreements such as design and engineering agreements, construction/erection agreements (“balance-of-plant agreements”), and procurement/sale agreements using one or more contractors for each of the various services. Depending on contractual structure, warranties, insurance and other matters may be addressed in a single agreement or in each individual agreement.

Preliminary Design and Engineering Services. Biofuels projects often require certain design and engineering expertise that is unique to this sector of the renewable energy industry. For instance, relatively few firms (a) design, engineer and manufacture biofuels projects, and (b) design, engineer and construct the related project facilities. Part of the design and engineering expertise required is an understanding of the complexities of the ethanol fermentation process (whether corn- or sugar-based production) and/or the biodiesel refining process

(typically vegetable oil, but also waste oil, yellow grease or beef tallow) that the project will utilize, including volumes of feedstocks, handling of byproducts (e.g., DDGS, CO₂, glycerin) and wastes (toxic and otherwise), among other things. These and other factors will determine the type of process technology the project will use as well as the power source and steam supply that will be needed.

Typical EPC Contractual Structure for a Biofuels Project. Given the multiple factors influencing the development of a biofuels project, no single contractual structure would apply to all such projects. However, a

common example of a contractual structure, a turnkey EPC agreement, illustrates in a limited way how a project developer may pursue the development of its biofuels project.

Using a turnkey EPC agreement, the project developer would contract with a contractor who would undertake the development of the entire project, including the design and engineering of the balance of plant, fermentation or refining systems, and possibly cogeneration systems for the production of electrical power and steam to be used in the biofuels production facility, as well as waste management systems and related facilities, including roads, warehouses and security systems. Such contractor would be responsible for the commissioning, start-up and performance testing of the facility as well.

The parties must focus on the scope of work, measures of completion, respective warranty obligations, limitations of liability and related insurance issues. These issues are discussed below.

Scope of Work. In either case described above, the parties should place great emphasis on the description of the scope of work set forth in the agreements. The scope of work should describe, in detail, the actual design, engineering and construction obligations of the contractor. Generally, whatever is not provided for in the contractor's scope of work is the project developer's responsibility to complete or to contract with third parties to complete. The contractor's scope of work typically includes the design and engineering of the plant, including its principal parts and components, as well as certain obligations relating to the commissioning, start-up and performance testing of the plant. The contractor's services usually include control systems and related warranty work. As with other aspects of such an agreement, the scope-of-work provisions will probably be heavily negotiated.

Completion and Start-up Obligations. By whom, when and how the plant is to be commissioned is usually set forth in the scope-of-work provisions of the relevant agreement. Given a contractor's in-depth knowledge of its work, the contractor may be the party delegated to commission the plant that it supplies. However, this work may be the responsibility of the project developer (with assistance from the contractor). Attention is given in the agreement to the stages of completion, such as actual delivery of equipment to the project site, the installation of such equipment, and commissioning, start-up and performance testing of the plant. Once these progress milestones are established, completion is generally evidenced by the contractor's certifications of, for example, "interim completion," "substantial mechanical completion," "final mechanical completion" and "final sign-off." Each such certification is considered an incremental measure that the project must satisfy in order to progress to the next measure. As with other supply/construction-related agreements, progress payments by the project developer to the contractor (as set forth in the relevant agreement) would be based, in part, on the milestones described above. For instance, the project developer would typically pay the contractor an amount toward the agreed-on contract price when its order is submitted and make additional payments upon (a) the delivery of certain equipment and related components to the project site, (b) the installation of such equipment, (c) the commissioning of the plant as installed, and (d) assuming the foregoing stages are executed properly, the final sign-off by the parties on the project.

Performance Guarantees and Warranty Obligations. Performance guarantees and warranty-related obligations are likely to be an issue of substantial negotiation between parties to these types of agreements. The nature and scope of a contractor's obligations will, however, depend on what services, materials and equipment the contractor is contracted to provide. A contractor's obligations generally include such things as a general

parts warranty (the definition of a defect can be important when determining what is included or excluded as a defective or nonconforming part or component), utilities consumption rate and output guarantees, and related matters.

The issues that contracting parties consider in respect of warranties include (a) the period or term of a particular warranty and whether the term can be extended, (b) the definition of a defect, (c) limitations on a warranty due to third-party services (such as operation and maintenance services) and (d) the remedial measures a contractor may take to cure any defect. Additionally, a project developer may desire that any third-party contractor or subcontractor warranties that the contractor possesses in respect of any parts or components used in the plant are “passed through” to the project developer.

Limitation of Liability. As with any other construction-services and procurement agreements, contractors will seek to limit their liability to a project developer. The provisions in a relevant agreement will usually exclude liability for consequential, indirect, incidental or special damages. A contractor will usually seek to have whatever damages it may be liable for limited to liquidated damages of a certain value, usually an agreed-upon percentage of the value of the relevant agreement. In any event, the parties may specify the actual maximum aggregate liability a contractor may have, but nonetheless carve out from such limitation liability for particular issues. For instance, the contractor could agree that it would be liable for certain delay-related damages arising from the project developer’s failure to (a) satisfy its contractual commitments under certain supply agreements due to an event in the contractor’s control or as a risk assumed by the contractor, or (b) obtain a certain time-sensitive benefit or credit (such as tax credits or bonus depreciation, as discussed below).

Project Financing. The high capital costs associated with biofuels projects mean that such projects will likely require some form of substantial debt financing or joint venture financing to finance the design, engineering, procurement, construction and initial operations of the project. Financial institutions and/or potential investors asked to finance or invest in a project will demand the opportunity to review and comment on a project’s design and engineering, procurement, process engineering licenses and construction agreements (as well as related operations and maintenance and warranty agreements, if separate) before committing funds. Of special interest to prospective lenders and/or investors are the provisions in the agreements that provide the lender/investor with the ability to enter into the project if the project developer (as the borrower) or the project defaults, and provisions that specify the extent and nature of any damages available to a project developer from a contractor. Additionally, financial institutions will want to comment on the payment plans and security, warranty and inspection provisions set forth in the project agreements.

Due to such involvement, and to avoid issues arising from any potential inconsistencies, the project developer should be prepared to present a consistent and cogent set of project agreements to lenders/investors and to listen to their suggestions for such agreements. Further, a project developer should be prepared for the possibility that lenders/investors may want to make substantial changes in the negotiated agreements. For instance, lenders will often be interested in the project’s financial and operational viability (as may be reflected in a feasibility study), and much of that interest will necessarily focus on the project developer’s rights and recourse under the relevant agreements. In particular, lenders will be interested in the extent, limitation and operation of any contractor warranties, contractor indemnities, insurance policies, progress or performance-test milestones and payments, and performance and payment guarantees (if any). Lenders will also want to know whether the

various agreements are entered into on an “arm’s-length” basis, usually meaning that the terms and conditions of such agreements are based on typical commercial terms and standards.

Performance and Payment Guarantees Issues. A project developer should cause the various contractors to procure, for the benefit of the project developer, performance and payment guarantees, or bonds, to ensure (a) the timely performance of contractors (whether engineers, constructors or procurement contractors), (b) that such performance on the project has been completed pursuant to the terms of the relevant agreements and (c) that no liens or undesired security interests are lodged against the project in relation to unpaid subcontractors. These guarantees are described below.

- **Performance Guarantee.** A performance guarantee is usually issued by a parent company or other creditworthy entity, such as a bonding company, selected or approved by the project developer, for an agreed-on sum. This sum is available to satisfy the project developer’s damages if the contractor has failed to perform its contractual obligations as specified in the relevant agreement. For instance, when the contractor defaults or cannot complete the project, the project developer may call on this bond or guarantee to pay another contractor to complete the project. The project developer will want to reserve its other rights against a defaulting contractor if the performance bond does not fully cover the project developer’s costs (i) of completing the project or (ii) associated with damages the project developer may owe to a third party as a result of any default by the project developer.
- **Payment Guarantee/Bond.** A payment guarantee or bond is intended to ensure that, in case the contractor defaults on the project, no liens or other security interests will attach to the project developer’s property or to the project. A lien claim, normally filed against the project developer’s property, may be “bonded-over” so that it attaches instead to the payment guarantee or bond. Lenders, upon their review of the agreements, may demand or require such payment guarantees to enhance the lenders’ security interests in the project.

The project developer or the lenders may require other security from contractors, such as parent guarantees, standby letters of credit and other forms of assurance that the contractors will perform. The contractors will demand to be given ample opportunity to cure any default or delay and will seek to limit a project developer’s ability to call on performance or payment bonds or other assurances (such as a standby letter of credit) that a project developer may possess. Further, contractors will usually demand some form of reciprocal security issued by the project developer or its parent company, including parent guarantees, payment guarantees and the like.

Liens and Releases Issues. When the project developer makes periodic payments to contractors, the developer should obtain a lien release from each contractor and subcontractor. A lien release will help protect the project developer from liens being filed on the project by subcontractors who have not been paid by a primary contractor (and its subcontractors). Such liens are undesirable because (among other things) once filed, they can delay or interfere with the project’s financing. Worse still, if a lien claimant is successful, such a lien could be used to force the sale of the project, or part of it, as well as to interfere with the sale of the project by the project developer.

Insurance and Indemnity Issues. A project developer should obtain appropriate indemnities and insurance coverage from the various parties with whom it contracts, and should require those parties to obtain similar

protections from their subcontractors and material suppliers for the benefit of the project developer. Relevant indemnities include a general indemnity for personal injury, death and property damage claims, contractor and subcontractor lien indemnities, an indemnity for taxes (other than those attributable to the developer), an indemnity for violation of applicable laws, and an indemnity for intellectual property infringement claims. Appropriate insurance policies include commercial general liability, workers' compensation and employer's liability, automobile, errors and omissions (for design and engineering services), and builder's all risk (for the project). Such policies should name the developer and its financing party (if any) as additional insureds and contain appropriate waivers of subrogation. Appropriate policy limits will vary with respect to the nature of the work being performed by the insured and the scope of the project. It is advisable for project developers to consult with an insurance or risk management specialist to ensure that appropriate types and levels of coverage are obtained.