

**LAVA LAW
SIGNING UP:
—Power Purchase Agreements and
Environmental Attributes—**

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The Basics

The Parties

- *The Seller.* The seller is often the developer and owner (or the developer with investors in an ownership entity) of a geothermal power plant that will generate energy and associated environmental attributes (“output”), but the seller may also be a power marketer that is buying the output of a plant and reselling it at wholesale to one or more buyers. If a power marketer is reselling output, the power purchase agreement (“PPA”) for the resale of that output will usually track the relevant terms of the underlying PPA with the project owner in a “back-to-back” PPA for the resale, because the marketer will not want to promise more than it has the right to deliver. The terms of the back-to-back PPA will be almost the same as those in the underlying project PPA, except for price or other unique items that the marketer does not wish to, or agrees not to, pass through to the ultimate buyer.
- *The Buyer.* The buyer is often a utility that purchases the geothermal plant’s output to serve its load. The utility may also be motivated by a “renewable portfolio standard” or other regulatory requirement or policy that encourages the development of renewable energy. In a state that permits direct access, 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 the geothermal plant’s output for resale to one or more third parties. Power marketers can sometimes purchase all of a project’s output in situations in which no other single market player is willing or able to do so, thus enabling the owner to finance the project while the power marketer takes what is in effect a “merchant” position.
- *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 output levels or other performance standards. Each party will be concerned about the other’s ability to satisfy these payment obligations. If one party is not sufficiently creditworthy, the concerned party may require the other party to provide a guaranty or post a letter of credit or other security to ensure that amounts due under the PPA will be paid.
- *The Lender.* Frequently the project will be financed. The lender may also be the provider of the credit support required of the seller. The lender will be concerned that it has rights to protect its collateral in the PPA and in the project itself prior to the buyer’s exercise of remedies under the PPA, especially if any specific seller event of default entitles the buyer to terminate, or to exercise other extraordinary remedies such as “step-in” rights.

Regulatory Concerns

- *Exempt Wholesale Generator and Market-Based Rates.* Unless the geothermal plant is a “qualifying facility” or “QF” under a certain MW-size threshold, or is owned directly by a utility to serve its customers, the project owner will need to obtain authorization from FERC under Section 205 of the Federal Power Act to enable the seller to charge market-based rates, even if all sales are made under a single contract. The seller will also likely elect to apply to become an “exempt wholesale generator” as defined in the Energy Policy Act of 2005.

- *Qualifying Facility.* If the geothermal plant is a qualifying facility under the Public Utility Regulatory Policies Act of 1978 (“PURPA”), the energy that it generates may be sold by the project owner without the requirement for a FERC Section 205 tariff, so long as the sale is made pursuant to PURPA utility must-buy obligations, or the project is under a certain MW-size threshold.
- *Retail Sales.* With certain exceptions, power sold to an end user, such as a residential customer or an industrial user, is a retail sale that may make the seller subject to regulation as a public utility under applicable state laws. Because such regulation is burdensome and costly, project owners usually avoid retail sales of energy. In states that have implemented retail deregulation (or “direct access”), it may be possible to sell power at retail rates to certain end users. The law of the state in which the end user is located must be checked to see if any retail sales are permitted and, if so, under what circumstances.

The Term

Relationship to Project Financing

If the geothermal plant is financed with limited-recourse financing, the term of the PPA needs to be sufficiently long to amortize the project debt. 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. Thus, for example, if the term of the PPA is 20 years, lenders will generally be willing to amortize the debt over a 15- to 16-year period. Generally, only the base term of the PPA is taken into account, because the lender has no assurance that the buyer will elect to continue the PPA into a renewal term.

Useful Life

Since the buyer under a PPA effectively pays for the entire capital cost of the project (plus a profit to the project owner), the buyer normally will want the PPA to capture the entire value of the project by covering the entire economic life of the project facilities. Because the entire capital cost of the project will generally be amortized over the base term of the PPA, it is possible to eliminate the cost elements that relate to the project debt from the power price during the renewal terms, making it less than the power price during the base term. The project owner thus preserves its return on the project but does not get a windfall return during the renewal terms.

Effective Date

The PPA should be binding on the date it is signed (often called the “effective date”). This ensures that the buyer will buy the output once the project is built and that the project owner will not have the right to sell its output to anyone other than the buyer.

Commercial Operation Date

The term of the PPA usually begins on the effective date, but the length of the term is usually defined by reference to a “commercial operation date.” For example, the term might end on the 25th anniversary of the January 1 next following the commercial operation date. Thus, if the term were 25 years and commercial operation began on November 1, 2001, the term would end on January 1, 2027. In other PPAs, the term begins on the commercial operation date and extends for a stated number of years from that date. In general, geothermal facilities require longer lead-time to develop and construct than do wind projects, and this fact should be taken into account in establishing the mechanism for determining the term.

Because the commercial operation date often sets the term (and sometimes the point at which the price for energy and environmental attributes switches from a “test energy rate” to a “contract rate,” or the point from which capacity payments are to be made), it is important to define “commercial operation date” carefully. In general, the commercial operation date can be defined as the date on which all portions of the project necessary to put it into operation, along with the interconnection facilities to the transmission system, have been constructed, installed, tested and commissioned and are both authorized and able to operate and deliver energy in commercial quantities to the transmission system in accordance with prudent industry practices. Frequently the buyer will require that an inspecting engineer certify that these requirements have been met.

Termination Before the Commercial Operation Date

PPAs often 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 with regulatory authority over the buyer to approve a PPA; (2) inability to obtain an interconnection agreement or needed transmission rights; (3) seller’s inability to obtain leases, rights-of-way, or other land rights required to build the project; (4) seller’s inability to obtain permits required to build or operate the project; (5) seller’s inability to obtain an authorization to sell power at market-based rates; (6) seller’s inability to obtain financing; and (7) project’s failure to achieve commercial operation by a certain date. Termination rights require careful negotiation to make sure that all possibilities have been considered, but both parties will want the circumstances under which the other party can terminate to be as limited as possible. 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. For example, the seller should not be able to assert the inability to obtain a permit as a basis for terminating the PPA unless the seller can demonstrate it has used diligent efforts to obtain the permit.

Purchase and Sale

Delivery Point

The PPA will require the sale of energy generated by the plant 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 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 deliver energy to a specific point some distance from the plant, in which case the seller will be responsible for securing the required transmission rights to that delivery point and the buyer will be responsible for obtaining the transmission rights required to take the energy at and from that delivery point. Transmission ancillary services can be fairly costly and should be specifically allocated in the PPA. Underlying transmission rights necessary to the transaction should be reviewed and verified. Title to and risk of loss of the energy being delivered should pass from seller to buyer at the agreed upon delivery point specified in the PPA.

Pricing

- *Energy Rate.* The price for energy is, of course, a very 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, thus encouraging the seller

to lock in the initial price and the escalation rate by achieving commercial operation as soon as possible.

- *Test Energy Rate.* The PPA may require the buyer to buy power from the units included in the plant as they are installed, connected to the transmission grid, and tested. To encourage the seller to achieve commercial operation as soon as possible, such energy is sold at a test energy rate, which is often significantly lower than the rate that will be paid once the commercial operation date for the entire project is reached.
- *Capacity Charge.* Because geothermal energy is a reliable baseload resource, the buyer will sometimes pay a price for the plant's capacity in addition to the energy rate. This price is usually stated in dollars per kW-month or kW-year.
- *Mobile-Sierra Doctrine.* The PPA should include a clause stating that the buyer will not make any unilateral application to FERC for a change in the PPA's rates, terms, and conditions or seek any relief from those rates, terms, and conditions under Section 206 of the Federal Power Act

The clause should also provide that third-party or sua sponte challenges to the PPA will be governed by FERC's "public interest" standard of review rather than the more stringent "just and reasonable" test.

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, chemical, or other substance attributable to the geothermal project, 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 clearly state whether energy generated by the plant is being sold with or without environmental attributes—the failure to do so has led to disputes about whether the environmental attributes remain with the project owner or are deemed sold to the buyer. If environmental attributes are being sold under the PPA, the seller will usually warrant its title to the attributes, but will not want to warrant the current or future use or value of the attributes or whether and to what extent they will be recognized at law. The PPA should also make it clear that state or federal tax credits and other financial incentives are not part of the environmental attributes and thus are not being conveyed to the buyer.

Allocation of Taxes and Other Charges

The PPA should specify which party pays any sales, excise, or other taxes arising from the transaction. Although most states do not tax wholesale energy sales, the parties may wish to consider allocating the tax liability resulting from future legislation.

Permitting and Development

Commitment to Develop

A PPA with the project owner as seller 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” (that is, an option to require the other party to purchase output) 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 and construct the project, as well as the off-ramps that each party has if the project does not achieve certain stated milestones.

Status Reports

The buyer is typically interested in the development of the project, since 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, PPAs frequently require the seller to deliver regular reports to the buyer about the status of permitting and construction.

Milestones and Delay Damages

The PPA often includes a schedule of certain project milestones (for example, the date by which the seller must secure project financing, the date by which turbines and other major 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 specified 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—although this can leave a seller with a half-finished project and no PPA and obviously leaves the buyer with no PPA. Buyers are concerned that this gives the seller a right that resembles a put and strongly prefer to require the seller to suffer some financial consequences if project milestones are missed. Sellers in turn can use these financial obligations as a way of maintaining the PPA in force notwithstanding delays. 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.

Interconnection and Transmission

The PPA often requires the seller to bear the cost of interconnection (including any network upgrades required by the new project, although some of these costs may be shared with other generators, especially if the buyer is a utility) and all costs of transmitting the energy to the specified 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.

Performance Incentives

A buyer may 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 in the market to the extent that the project fails to perform as expected, either on an equipment output or an availability basis. Performance guarantees enable the buyer to plan around the plant’s expected output and availability and strongly encourage the seller to maintain a reliable and productive project.

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. The period may be biannual, annual,

or any other period fixed by the parties. The seller's engineering and other technical data regarding the characteristics and capabilities of the geothermal resource comprising the project will be crucial in determining appropriate levels of output guarantees.

Availability Guarantees

If a PPA includes a capacity charge, the charge may be linked to a periodic availability test that enables the buyer to receive a partial refund of capacity payments if, in practice, the facility is not available at least a certain percentage of the time. The PPA will then address how scheduled maintenance outages, forced outages, and force majeure events are to be taken into account for purposes of determining the facility's availability.

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 shortfall (stated in MWhs) relative to the amount of output or capacity 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-upon index or other pricing factor. Because market indexes cover only power prices and do not include the value of environmental attributes, the PPA may also include an adjustment to account for the assumed value of the environmental attributes. The amount of liquidated damages is usually determined periodically, typically 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.

Termination Rights

To protect against chronic problems at an unreliable plant, the PPA may allow the buyer to terminate the PPA if the plant's output or availability falls below a stated minimum for a certain number of consecutive years.

Curtailement and Force Majeure

Curtailement

The PPA often describes circumstances in which either party has a right to curtail output. For example, the seller may have a right to curtail deliveries if the plant is affected by an emergency condition. The PPA may permit the buyer to curtail for convenience, in which case the PPA usually requires the buyer to pay the purchase price for the curtailed generation, together with the after-tax value of any corresponding lost incentives, such as production tax credits. Geothermal plants are not as readily dispatchable as other types of power plants, so, from a seller's point of view, the PPA should provide for sufficient notice of dispatches and should contemplate base load operation as much as possible.

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 curtailement is caused by an event beyond a party's control, the party's duty to perform under the PPA will be excused. For example, if a natural disaster disables the transformer at the delivery point, the seller could be excused from delivering energy, and the buyer could 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. For geothermal projects, sellers will often want force majeure to include unexpected depletions of the geothermal resource that fuels the project, but

buyers will want to ensure that normal degradation of the resource over time does not provide a force majeure “off-ramp” to the seller.

Parties often heavily negotiate force majeure provisions. Good provisions should carefully distinguish between events that constitute “excuses” (which relieve the affected party or parties from the duty to perform) and those that are “risks” (which are simply allocated to one party or the other). The ability to buy energy, capacity, or environmental attributes at a lower price from someone else, or to sell them at a higher price to someone else, is not appropriately characterized as a force majeure event. Moreover, a party’s inability to pay should not constitute a force majeure event under the PPA.

Operation and Metering

Operation and Maintenance

The PPA generally outlines the seller’s responsibility to operate and maintain the project in accordance with prudent utility or electric industry practices. Such duties typically include regular inspection and repair, as well as completion of scheduled maintenance.

Metering

The PPA’s metering provision is important because it is used to determine the quantity of energy and environmental attributes 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 often 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 back-up procedures for 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, 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. The PPA may also provide that the plant’s meter will be governed by third-party meter standards, such as those imposed on power plants located in California by the California Independent System Operator.

Billing and Payment

Billing and Payment

The PPA typically determines how invoices are prepared, when they are issued, and how quickly they must be paid. The billing provision often states that an invoice is final if not challenged within a stated period of time. The PPA usually sets forth procedures for raising and resolving billing disputes, as well as the interest rate and penalties that apply to late payments.

Right to Audit

The buyer will typically have the right, upon reasonable notice and agreement as to costs, 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.

Defaults and Remedies

The PPA will usually list specific events that constitute defaults. These may include

- failure by a party to pay an amount when due;
- failure by the seller to operate the plant and deliver energy to buyer in accordance with the PPA;
- other types of material defaults, such as the seller's failure to use commercially reasonable efforts to achieve a material project milestone;
- the bankruptcy, reorganization, liquidation, or other similar proceeding of any party; and/or
- a material default by a party's guarantor.

The default clause should specify how long the defaulting party has to cure a default. If the default is not cured within the agreed-upon period, the nondefaulting party usually has the right to terminate the agreement and pursue damages or other remedies at law or in equity, to suspend performance of its obligations, or to seek specific performance and injunctive relief. The remedies clause may also limit remedies—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. The seller may seek to limit its overall liability to pay damages for its default under the PPA. If the PPA is built around a form such as the EEI (Edison Electric Institute) or WSPP (Western Systems Power Pool) forms commonly used in trading and short-term transactions, care must be taken to override the termination payment components that are not desirable in a long-term PPA. The PPA should address when and how a party can exercise its rights to collect on any security posted to secure the other party's obligations under the PPA.

Boilerplate and Examples

The PPA will also address “boilerplate” matters, such as confidentiality, representations and warranties, the parties' rights to assign the PPA, the seller's right to pledge the PPA to project lenders, 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. As with any contract, an investment in negotiation time and careful drafting will pay off over the long term should disputes arise between the parties.