

## **NOTICE CONCERNING COPYRIGHT RESTRICTIONS**

This document may contain copyrighted materials. These materials have been made available for use in research, teaching, and private study, but may not be used for any commercial purpose. Users may not otherwise copy, reproduce, retransmit, distribute, publish, commercially exploit or otherwise transfer any material.

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

# Geothermal Site Acquisition and Early Development: Key Legal Issues and Emerging Strategies

Peter Mostow and Andrew Braff<sup>1</sup>

Wilson Sonsini Goodrich & Rosati, P.C.

## ABSTRACT

This paper surveys the recent surge of interest in early-stage geothermal energy project development, describes some of the key legal issues that must be faced by developers of such projects, and recommends strategies for resolving these issues with an eye to facilitating geothermal development in the western United States.

The paper includes an assessment of the impacts of geothermal leasing and permitting reform at the Bureau of Land Management and the U.S. Forest Service for projects on federal land. It also reviews the status and efficacy of programs for leasing and permitting exploration of geothermal resources on state owned lands, in particular California, Nevada and Utah. The paper covers key legal issues that have emerged in various states to complicate development (for example, the uneven state treatment of geothermal resources as mineral rights, water rights or neither, and uneven rules regarding their ownership by surface owners, mineral owners, or both). The paper also covers state differences in environmental permitting regimes for geothermal development, as permitting issues have been a substantial cost and time issue, if not a fatal one, for many otherwise attractive projects.

Finally, since much geothermal site acquisition occurs through contractual arrangements between larger, well-funded players and smaller, existing developers with rights to the resource at a given site, the paper also focuses on successful, and not so successful, structures for the financing and joint exploration and power plant development on geothermal properties. Structures covered include joint development partnership structures, convertible development loans, and resource unitization under federal and state regulations.

## I. Leasing and Permitting Reform

Delays in the site leasing and environmental permitting processes have been a key drag on the pace of domestic geothermal development in the past two decades. However, since about 2000 increased state mandates and federal incentives for renewable energy have resulted in various streamlining and regulatory reform initiatives targeted at these areas.

### A. Federal

Half of the nation's current geothermal energy production and 90 percent of known geothermal resources are located on federal lands. Geothermal leasing and permitting on federal land, including over 700 million acres of sub-surface mineral estate, is regulated wholly or jointly by the Bureau of Land Management (BLM). However, at present, only 700,000 of those acres are being leased for geothermal development. Thus, the efficacy of BLM's leasing, permitting and environmental review processes are critical to unlocking the nation's untapped geothermal resources.

#### 1. Drivers for the Expansion of Geothermal Leasing and Permitting after the Energy Policy Act of 2005

Geothermal resources within the federal sub-surface mineral estate are accessed primarily through a BLM-administered competitive leasing process originally established by the Geothermal Steam Act of 1970.<sup>2</sup> These leases are the lynchpin of commercial geothermal development.

##### (a) Market-Driven Opportunities for Development

Prior to the Energy Policy Act of 2005 (EPA), the decision to open up federal land to competitive bidding was vested exclusively in the BLM, as that agency designated which lands constituted

<sup>1</sup>Mr. Mostow is a partner, and Mr. Braff an associate, in the Clean Technology and Renewable Energy Group at Wilson Sonsini. Along with other members of their team, they assist a variety of geothermal developers with a full range of matters including site acquisition, permitting of exploration and development projects, energy regulatory and power purchase agreements, EPC contracts, JV and development financing structures, project finance and tax credit monetization. The authors wish to acknowledge the assistance of Henry Stern (Boalt Law School 2009) with the researching and drafting of this paper.

<sup>2</sup>30 U.S.C. 1001, et seq.

“known geothermal resource areas” (KGRAs). Only those tracts determined to be KGRAs were open to bidding. Thus, millions of acres of federal land were only available at the discretion of the BLM. Market forces, such as the growing demand for renewable energy, had little role in determining what federal lands were available for development.

The EPAct opened up the competitive bidding process by requiring the Secretary of the Interior to accept nominations from qualified persons or companies for geothermal leases on all available federal lands,<sup>3</sup> not just KGRAs. Now, once a qualified party nominates a particular tract of land for leasing, the BLM must hold a competitive lease sale at least once every two years.<sup>4</sup> In instances where a geothermal resource is shared by several parcels, the EPAct allows the resource to be competitively bid on as a block.<sup>5</sup> If no bids are received for either block or single tracts through the competitive process, nominated tracts of land must be made available for noncompetitive leasing for a two-year period.<sup>6</sup>

This market-driven process for nominating federal lands for leasing will be enhanced by improved information about the location and viability of untapped geothermal resources. With a budget of \$15 million annually, the US Geological Survey is currently conducting the national Geothermal Resource Assessment, with an update due in August 2008 and a final product due in 2012. The last study of this kind was conducted in the 1970s.

In addition to federal land opened up through private nomination, the BLM and the US Forest Service (USFS) recently proposed, in a programmatic environmental impact statement (PEIS) for all public and national forest system lands, to open up 117 million acres of BLM administered public land and 75 million acres of national forest system land to geothermal leasing.<sup>7</sup>

#### *(b) Acreage Limits Relaxed*

The EPAct expanded dramatically the overall size limits on individual geothermal projects and owned portfolios of projects. Geothermal leases may now occupy 5,120 acres per lease, double the previous limit.<sup>8</sup> Total control and ownership of geothermal leases within a single state is now 51,200 acres per state, more than the previous limit of 20,480 acres per state. Moreover,

those acres owned collectively by a unit do not count towards the in-state limit.

#### *(c) Lower Royalty Rates with Benefits to Local Governments and the BLM*

Before the EPAct, royalty rates were calculated through a complex “net-back” methodology. The new scheme has been simplified to a two-tier rate on “gross proceeds.”<sup>9</sup> As an incentive to near-term production, royalties on new plants or expansions have also reduced 50% for four years if the new geothermal project or expansion is placed in service by August 8, 2010.<sup>10</sup>

In addition to becoming less complex and onerous on developers, royalties are now shared by county governments as well. Previously the state and federal government split the share of royalties 50-50. After the EPAct, the county receives 25% of royalties, the federal government receives 25% and the state receives the remaining half.<sup>11</sup> This shared revenue model is intended to ensure productive geothermal projects benefits reach the localities from which they originate.

The EPAct also made available the federal share of royalty revenues to the Secretary of the Interior, without further need for appropriation, to implement the BLM’s geothermal program until August 8, 2010.<sup>12</sup> Closing this loop of federal royalty stream will help alleviate the backlog of leasing applications and pay for the administrative costs needed to streamline the program.

#### *(d) Additional Revenue Streams Made Available to Geothermal Developers from By-Products*

The EPAct eliminated the provision that subjected co-production of associated minerals on geothermal developments to additional royalties. Now, a geothermal project that concurrently produces minerals will not be subject to royalties beyond those imposed on the gross proceeds of the geothermal project.

#### *(e) Expediting Lease Applications*

Before the EPAct, lease applications could be left unprocessed for decades. While application processing procedures have been improving steadily since 2001,<sup>13</sup> the pace was not fast enough for Congress. The EPAct accelerates the review of backlogged lease

<sup>3</sup>30 U.S.C. § 1003. However, some federal lands are expressly prohibited from geothermal development including lands within the national recreation areas, lands in a fish hatchery administered by the Secretary of the Interior, wildlife refuges, game ranges and other conservation oriented tracts, as well as tribally or individually owned Indian trust or restrict lands within Indian reservations. *Id.* at § 1014(c).

<sup>4</sup>30 U.S.C. 1001, et seq.

<sup>5</sup>*Id.* In these instances, lessees often bundle their leases into “unit agreements” and, subject to BLM approval, multiple lessees aim to cooperatively develop the resource.

<sup>6</sup>*Id.* Noncompetitive leasing also may apply for lands subject to existing mining claims.

<sup>7</sup>US DEP’T OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, US DEP’T OF AGRICULTURE, FOREST SERVICE, *Draft PEIS for Geothermal Leasing in the Western US*, ES-5 (May 2008).

<sup>8</sup>*Id.* at § 1006.

<sup>9</sup>For years one through ten, rates are between 1 and 2.5 percent. After that, royalties range between 2 and 2.5 percent. *Id.* at § 1007.

<sup>10</sup>*Id.*

<sup>11</sup>*Id.*

<sup>12</sup>*Id.*

<sup>13</sup>In 2001, the BLM began expediting the application process for geothermal leases. Since 2001, 291 leases have been granted, compared to 25 leases from 1996-2001. Currently, the BLM geothermal program has over 58 producing leases, produces 24.2 megawatt-hours of energy per year, and accounts for more than \$12 million in revenues annually. See BLM Geothermal Program homepage <<http://www.blm.gov/wo/st/en/prog/energy/geothermal.html>>.

<sup>14</sup>30 U.S.C. § 1003(d).

applications by explicitly requiring the BLM to process *all* leases pending at the time of its passage by August 8, 2010.<sup>14</sup>

## **2. Streamlining of Environmental Review under a Programmatic Environmental Impact Statement (PEIS) is Pending**

The pending PEIS is one method by which the BLM, in conjunction with the USFS, will expedite pending and new lease and permit applications. For all geothermal permits granted by the BLM, the National Environmental Protection Act (NEPA)<sup>15</sup> requires review of impacts that may significantly impact the environment. Leases issued prior to the grant of a permit also require NEPA review. The current leasing and permitting process requires a stand-alone environmental assessment be made each time any exploration, development, or utilization permit is being considered by BLM or any other federal agency with concurrent powers. Permits have proven particularly difficult to obtain on National Forest System lands, over which the BLM shares jurisdiction with the USFS. When a geothermal lease or permit application involves National Forest System lands, the USFS must consent to that use and the BLM must incorporate any lease stipulations deemed necessary by the Forest Service Chief to minimize impacts to other resources, and comply with USFS regulations and the Land and Resource Management Plan.<sup>16</sup>

After the EPAct, the BLM attempted to process all geothermal permit applications within 90 days of submission and to issue such permits within six months of the date of application. These ambitious timelines have been delayed in most cases where the consent of other agencies is also required. A Memorandum of Understanding (MOU) signed in 2006 by the Secretaries of Interior and Agriculture sought to streamline interagency coordination of environmental and permitting review.<sup>17</sup> Four primary streamlining methods were identified by EPAct and MOU: (1) uniform administrative procedures to expedite geothermal lease applications, (2) a five-year program for geothermal leasing of lands in the National Forest System, (3) a five-year program for reducing the backlog of outstanding lease applications by 90 percent, and (4) a joint data retrieval system for tracking lease and permit applications.

While these requirements have yet to be fulfilled, all are underway. To meet these goals, the BLM and the USFS drafted a programmatic environmental impact statement (PEIS) to analyze and expedite the leasing of BLM- and USFS-administered lands in 11 western states and Alaska “that have reasonable near-term exploration/development potential for geothermal energy”.<sup>18</sup>

The purpose of the PEIS is three-fold:

1. To expedite leasing and permitting, programmatically assess the direct, indirect, and cumulative environmental effects of boosting geothermal leasing, exploration and development on BLM- and USFS-administered lands in “critical locations.”<sup>19</sup>
2. To amend BLM and USFS Resource Management Plans/Land Use Plans for geothermal leasing, based on PEIS analysis.
3. To provide general impacts analysis so that site-specific leasing decisions can be made rapidly for the pending backlog geothermal lease applications received by the BLM and USFS prior to January 1, 2005.<sup>20</sup>

The draft PEIS predicts a massive rise in geothermal development under its “reasonably foreseeable development” scenario,<sup>21</sup> which includes millions of new acres of federal land pre-ordained as available for leasing by the PEIS. The draft PEIS considers 5,500 megawatts of commercial electricity generation to be “viable” on this land by 2015, and an additional 6,600 megawatts are forecasted as “viable” by 2025.<sup>22</sup>

Whether the draft PEIS is criticized on a policy basis or challenged under NEPA sometime before its approval in Fall 2008 remains to be seen. But if the PEIS is upheld in its current form, subsequent projects that normally would require lengthy environmental assessments could now be “tiered” under the PEIS. Individual assessments would still be necessary when leases or permits were granted, but on lands identified by the PEIS, these assessments could be less detailed, and thus simpler to review. Ultimately, industry-wide transactional costs may be reduced substantially.

## **B. State**

At the state level, there exists a wide variety of applicable leasing and permitting regimes for site acquisition and early stage exploration and development activities.

One of the key state by state variations is the extent to which states provide a process for noncompetitive, relatively inexpensive leases, rights of way or permits for geothermal exploration. Such exploration rights typically allow the developer to convert them to a longer term lease if the results of exploration show commercial quantities of geothermal resource. Understandably, it can be essential for a developer to gain inexpensive control of state land for exploration for several years, confident in a long-term lease if exploration is successful.

<sup>14</sup>42 U.S.C. 4321 et seq.

<sup>16</sup>Notice of Intent to Prepare a Programmatic Environmental Impact States for Leasing of Geothermal Resources, 72 Fed. Reg. 113 (Jun. 13, 2007).

<sup>17</sup>Memorandum of Understanding between BLM and USFS, Implementation of Section 225 of the Energy Policy Act of 2005 Regarding Geothermal Leasing and Permitting (Aug. 2006) [http://www.blm.gov/nhp/spotlight/epa2005/BLM\\_MOU\\_WO\\_300-2006-08.pdf](http://www.blm.gov/nhp/spotlight/epa2005/BLM_MOU_WO_300-2006-08.pdf).

<sup>18</sup>US DEP’T OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, US DEP’T OF AGRICULTURE, FOREST SERVICE, *Scoping Report* (December 2007). Public Scoping meetings have already taken place and the draft PEIS is due sometime this month. Public hearings will follow the release of the draft PEIS and once again, following the release of the final PEIS in Fall 2008.

<sup>19</sup>Critical locations are characterized as areas with high potential for near-term exploration and development of geothermal resources. *Id.*

<sup>20</sup>See BLM’s Geothermal Resources Leasing Programmatic EIS website <[http://www.blm.gov/wo/st/en/prog/energy/geothermal/geothermal\\_nationwide.html](http://www.blm.gov/wo/st/en/prog/energy/geothermal/geothermal_nationwide.html)>.

<sup>21</sup>The BLM-USFS “reasonable foreseeable development” scenario was developed to serve as a basis for the PEIS’ analysis of environmental impacts that will likely result from future leasing and development in the western US over the next 20 years.

<sup>22</sup>*Draft PEIS*, ES-6.

Early geothermal exploration often is done in the expectation that the bulk of the development budget (and the bulk of the development time) will go to actual exploration activities, especially including drilling which is very costly. In a number of states, however, there are substantial environmental permitting hurdles to clear even for mere exploration, and these hurdles impose costs in terms of both dollars and time. States likely to have particularly challenging processes include those with state environmental policy statutes (or “mini-NEPAs”), such as Washington and California.<sup>23</sup>

## II. State Legal Issues Impacting Development— Ownership of Geothermal Resources

Geothermal project developers face a patchwork of state legal regimes governing ownership of geothermal resources, primarily because of the differences in how states define geothermal resources and distinguish such resources from other natural resources. Although these legal definitions of the nature of geothermal rights are central to determining ownership, they often are frustratingly unclear. As a best practice, therefore, a developer must understand how state law treats ownership of geothermal resources prior to entering into any definitive agreement with a fee holder for a resource assessment and certainly before the sale or lease of real property, as such treatment will inform the developer’s title search and examination of the deeds to the subject properties.

State statutory and common law generally treat geothermal resources as either a mineral right, water right or neither. Like the Federal Government,<sup>24</sup> California treats geothermal resources the same as any other subsurface mineral.<sup>25</sup> Hawaii<sup>26</sup> does as well. Deed language conveying “all minerals” to a grantee would therefore suffice to convey a property right in the geothermal resources associated with the mineral estate. Alternatively, if a deed granted all right, title and interest to certain real property but the grantor reserved unto itself “all minerals,” then the grantee would not receive title to the geothermal resources.

One case illustrates how determining the nature of geothermal resources is important. In the case *Geothermal Kinetics, Inc. v. Union Oil Co.*, the specific issue was whether ownership of geo-

thermal resources belong to the owner of the mineral estate or the owner of the surface estate.<sup>27</sup> In 1951, the owners of 408 acres in Sonoma County conveyed to Geothermal Kinetics’ predecessor in interest “all minerals in, on or under” the property. Later in 1963, owners of the surface estate entered into leases with Magma Power Company and Thermal Power Company to “drill for, produce, extract, remove and sell steam and steam power.” Magma and Thermal subsequently assigned a portion of their leases to Union Oil Co. At the time of the lease, the owners of the surface estate erroneously believed that they had rights to the mineral estate. In 1973, Geothermal Kinetics drilled a geothermal well on the property. The court held that a general grant of minerals in, on or under the property included a grant of the geothermal resources, including the associated steam, despite the fact that one or both parties to the conveyance were unaware of the presence of the geothermal resources at the time of the conveyance. As a result, Thermal, Magma and Union Oil—all believing they had a right to the geothermal resources under their leases did in fact not have such right.

States such as Wyoming and Utah characterize geothermal resources as water resources. Under Title 41 (Water) of the Wyoming State Statutes, *underground water* is defined as any “water, including hot water and geothermal steam, under the surface of the land or the bed of any stream, lake reservoir, or other body of surface water . . .”<sup>28</sup> As such, geothermal resources are considered public and ownership thereof is obtained through appropriation.

In Utah, *geothermal fluids* are defined as “water and steam at temperatures greater than 120 degrees centigrade naturally present in a geothermal system.”<sup>29</sup> Geothermal fluids are then “deemed to be a special kind of underground water resource” and the “utilization or distribution for their thermal content and subsurface injection or disposal of the same . . . constitutes a beneficial use of the water resources of the state.”<sup>30</sup> The statute further provides that ownership of a geothermal resource “derives from an interest in land and not from an appropriative right to geothermal fluids”<sup>31</sup> and that the “rights to geothermal resources and to geothermal fluids to be extracted in the course of production of geothermal resources . . . is based on the principal of correlative rights,” where each geothermal owner

<sup>23</sup>The third “Left Coast” state, Oregon, does not have a mini-NEPA and its land use statutes expressly provide for mineral exploration as an allowed or conditional use on most rural lands. Developers may pay for the easier permitting path during exploration, however, because Oregon has a mandatory state siting process for geothermal power projects over 25 MW.

<sup>24</sup>See e.g., *U.S. v. Union Oil Co. of California*, 549 F.2d 1271, 1271 (9<sup>th</sup> Cir. 1977); *Occidental Geothermal, Inc. v. Simmons*, 543 F.Supp. 870 (N.D. Cal. 1982); *Rosette Inc. v. United States*, 277 F.3d 1222 (10<sup>th</sup> Cir. 2002).

<sup>25</sup>*Pariani v. State of California*, 105 Cal.App.3d 923, 936-37 (1980); *Geothermal Kinetics, Inc. v. Union Oil Co.*, 75 Cal.App.3d 56 (1977); *Union Oil Co. of California*, 549 F.2d at 1273-1276.

<sup>26</sup>Hawaii Rev. Stat. § 182-1 (2007). Defines “minerals” as “any or all of the oil, gas, coal, phosphate, sodium, sulphur, iron, titanium, gold, silver, bauxite, bauxitic clay, diaspore, boehmite, laterite, gibbsite, alumina, all ores of aluminum and, without limitation thereon, all other mineral substances and ore deposits whether solid, gaseous, or liquid, including all geothermal resources, in, on, or under any land, fast or submerged; but does not include sand, rock, gravel, and other materials suitable for use and used in general construction” (emphasis added).

<sup>27</sup>75 Cal.App.3d at 58.

<sup>28</sup>Wyoming Statutes of 1977 § 41-3-901(a)(ii).

<sup>29</sup>Utah Code 73-22-3(4).

<sup>30</sup>Utah Code 73-22-8(1).

<sup>31</sup>Utah Code 73-22-4(1).

<sup>32</sup>Utah Code 73-22-8; 73-22-3(1), (3).

in the general land area underlain by geothermal resources has the right to produce, without waste, his just and equitable share.<sup>32</sup> Although the statute clearly defines ownership rights to geothermal fluids and geothermal resources, it is unclear, in a split estate situation, which owner has the right to develop the resource. It is plausible that all owners of a fee interest would have the right to apply to the Division of Water Rights, Department of Natural Resources to appropriate geothermal fluids.<sup>33</sup> This ambiguity could result in significant confusion over whether fee owners have the right to convey an ownership interest in the geothermal resources or a royalty interest where such rights have not been determined.<sup>34</sup>

Unlike the states mentioned above, Washington has statutorily defined *geothermal resources* as “natural heat energy of the earth from which it is technologically practical to produce electricity commercially”<sup>35</sup> and therefore deems geothermal resources *sui generis*, meaning that such resources are neither mineral nor water.<sup>36</sup> The statute further provides that geothermal resources are “the private property of the holder of title to the surface land above the resource.”<sup>37</sup> Although there is no case law in Washington on the ownership of geothermal resources, a deed purporting to grant or reserve rights to “all minerals” would not be sufficient to grant or reserve a right to the geothermal resources. The owner of the surface estate owns and can therefore separately dispose of this property right. Any geothermal developer seeking to purchase the subsurface rights from a fee simple owner of property should ensure that geothermal resources are called out specifically in the deed’s conveyance language. Alaska has taken a similar approach to Washington in that geothermal resources are neither mineral nor water.<sup>38</sup> Nevada also does not appear to have characterized geothermal resources, but it is clear that the “owner of real property owns the rights to the underlying geothermal resources unless they have been reserved by or conveyed to another person.”<sup>39</sup>

A developer of geothermal projects must be aware of both the common threads among these state regimes and more importantly the specific differences. Failing to determine and understand how a state categorizes geothermal resources as a property right could result in inadequately securing such property rights, and this in turn exposes the developer to a loss of site control to competitors and/or to subsequent litigation. Further, equity investors and lenders in any project financing will examine sale or lease agreements, as well as the deeds to the subject property or properties to ensure sufficient rights in the resource. Inadequately securing the property right will be a show-stopper for any project financing.

### III. Legal Structures for Early Development/Finance

#### A. Partnership and Teaming Structures

The joint venture (JV) is one classic structure for two-party and multi-party development of energy projects. At its core the JV is a partnership structure, although today it is most often implemented through the limited liability company (LLC) form. The key terms of any JV involve definition of the parties’ roles and responsibilities with respect to *control* of development, *funding* of development and allocation of the *profits and losses* from development.

The JV structure is widely used in the energy development business, often with little need for adaptation as it is applied to different types of energy technology. Geothermal project development, however, poses some novel challenges for the JV structure. In the first place, geothermal development (including substantial geological and geophysical work as well as drilling of exploratory wells) is often very expensive. Secondly, the magnitude and timing of these development costs are difficult to predict in advance. Third, the appropriate sequence of steps in the development process, and when to abandon or continue particular elements of a development program, are highly technical matters and often highly discretionary.

As a result of these realities, parties—especially parties of unequal sophistication and financial strength—often struggle to negotiate workable JV provisions respecting the control of development and the obligation to fund development at different stages. This often has resulted in otherwise viable resources languishing because no deal can be struck between the party with site control and parties with the resources to advance development. This situation, in turn, has led parties to explore alternative co-development structures.

#### B. Convertible Development Loans

A developer often needs exploration and drilling capital, but feels well-supplied with technical and development expertise and therefore does not desire a full JV partner. In such situations a potential financing structure is the convertible development loan. This loan involves a commitment by a financing party to provide a line of credit with defined amounts of funds released upon the developer’s attainment of particular milestones. As a loan, the financing documents will have standard terms regarding repayment, interest, default and remedies. The lending party will also take a security interest in the assets of the developer’s project company.

Because this type of loan involves much more risk than a project finance loan, and because the value of project assets may

<sup>33</sup>Utah Code 73-22-8(2).

<sup>34</sup>See, e.g., *Resource Management Co. v. Weston Ranch and Livestock Co., Inc.*, 705 P.2d 1028 (1985). Although this case is not about geothermal rights per se, the contract that was the subject of the dispute purported to convey a royalty interest in geothermal power produced from owner’s property. If the subject property was a split estate with multiple owners, it is unclear whether one would have the right to grant a third party such a royalty interest.

<sup>35</sup>Wash. Rev. Code 78.60.030 (2008).

<sup>36</sup>Wash. Rev. Code 78.60.040 (2008).

<sup>37</sup>*Id.*

<sup>38</sup>Alaska Statutes § 41.06.060. Geothermal fluid is specifically made not subject to appropriation, thereby excluding it from being a water right. Alaska Statutes § 41.06.050(c).

<sup>39</sup>Nevada Revised Statutes 534A.070 (2008).

be low in comparison to the outstanding loan balance during the development phase, the lender seeks additional upside and additional security. This is granted by making the loan convertible into an equity interest in the project company. The triggers for conversion, and means of determining the valuation of the company (and hence, of the converted loan balance) at the point of conversion are heavily negotiated in such transactions.

While development loans offer the borrower a means of securing substantial capital without oppressive dilution of equity, they of course pose a risk of foreclosure. Negotiating a loan agreement that gives the developer sufficient flexibility while adequately protecting the lender's interest is often a challenging and time-consuming task.

### **C. Resource Unitization – Federal Rules**

Federal unitization procedures offer another tool for facilitating joint development of geothermal resources, especially in circumstances where a resource is partially controlled by one or more relatively unsophisticated and under-capitalized parties that potentially could “hold out” and delay development (a situation that is not unheard-of in the industry).

In addition to changes regarding leases with the U.S. Bureau of Land Management (BLM) generally, the federal Energy Policy Act of 2005 prescribed specific new provisions regarding the unitization of BLM lands for the encouragement of effective geothermal development and those provisions were further detailed in regulations finalized in May 2007 (See Federal Register Wednesday, May 2, 2007, Volume 72 pp. 24358-24446). These regulations include a form of Unit Agreement that the BLM will enter into with parties subject to BLM leases and others. The purpose of the Unit Agreement is to bring together the properties associated with a specific geothermal resource in order to coordinate the efficient, productive development of that resource by having the parties agree to aggregate the land and allow a single operator to undertake the development. There has been significant concern that having separate parties and operators attack the same geothermal resource from adjacent lands will result in the wasting or inefficient use of the resource.

#### **1. Key Considerations in Unitization Generally**

The BLM's goal is to protect the public interest by encouraging productive development of the geothermal resource and deriving the revenue they are required to collect by statute from BLM leasing. It is important to keep in mind that other than that, BLM has no other significant concerns. Thus, for example, economic arrangements between parties regarding geothermal resource development, is not an issue for the BLM.

The most important unitization issue usually is mandatory versus voluntary unitization. The statute allows any parties to voluntarily sign up to Unit Agreements **and** the BLM may require any BLM leaseholder to enter into a Unit Agreement. *The BLM may NOT, however, require any party holding an interest in lands not covered by a BLM lease to enter into a Unit Agreement.* While in theory, this may result in Unit Agreements that create a “checkerboard” pattern of development of a geothermal resource as a result of some privately held lands not being included in the Unit Agreement, there are a number of factors that will drive a private party to recognize the advantage of joining

a Unit Agreement including the following leverage points over such a land holder:

- A private party may need access across BLM lands to utility connections
- A private party may recognize the value of more productive development of the resource
- A private party may need easements and rights of way across BLM lands
- Aggregated development may actually bring down the cost of development of the resource to the private party

#### **2. Key Considerations in Unit Agreements**

Unit Agreements create a joint relationship among interest holders in geothermal resource areas to establish joint development of the resource through a single operator. The statutes do not prescribe who will be that operating entity, so the parties are free to choose one from among them as the operator, establish a joint venture or find a third party operator to develop the resource (the “Unit Operator”). *The true economic and legal arrangement between the parties will be in a separate Joint Operating Agreement.* The Unit Agreement is merely meant to cover the basics between the BLM and the participating parties. As such, the best strategy is to make as few changes as possible to the Unit Agreement and deal with the heavy lifting between the parties in the Joint Operating Agreement as discussed further below.

##### *(a) “Unit Areas” versus “Participating Areas”*

Under the Unit Agreement, the “Unit Area” is the area covering all of the lands that are included at any particular point in time in the Unit Agreement. At the outset of the Unit Agreement, it would include all of the lands held by the participating parties (“Working Interest Owners”) that are made subject to the Unit Agreement. At a point in time where investigation of the resource has determined where the actual resource is located and can best be developed, the parties (with concurrence of the BLM) will establish a “Participating Area”. The Participating Area is that area which is “deemed to be productive” or is otherwise necessary to support the development of the resource (such as areas needed for support buildings and transmission equipment).

Once established, the Participating Area becomes the only area covered by the Unit Agreement; the remainder of the lands originally included in the Unit Area are thereafter excluded from the Unit Agreement. This is an important point because there are likely to be strongly felt negotiations between the parties over what land is and is not included in the Participating Area because it will have substantial economic impact on each party. It is also important to note that those excluded lands will still be subject to the terms of the existing BLM lease for those lands. The Unit Agreement contains provisions for further inclusion and exclusion of lands from the Participating Area. This is particularly important because it allows an aggrieved Working Interest Owner who believes more of its land should be included in a Participating Area to undertake their own well drilling and so forth in order to prove it.

##### *(b) The Relationship Between Joint Operating Agreements (JOA) and Unit Agreements*

*Establishing the Economic Relationship Between the Parties.* The JOA will need to address up front how the economics of the

development of the resource are to be distributed both from the cost side and from the revenue generation side. The obvious simple choice is for their to be a distribution of costs and benefits based pro rata on each party's pro rata share of the ownership interests in the Unit Area. However, the distribution is not so simple and it will be important to define it as tightly as possible up front. Some of the considerations in the distribution should be the following:

- Different treatment of passive versus active owners
- Different treatment of an owner who is acting as the Unit Operator versus other owners
- Assessing a different value to land needed solely for support facilities, easements/rights of way versus productive land overlying the resource
- Assessing a different value to marginally versus fully productive land

*Conflicts Between the Unit Agreement and the JOA.* The Unit Agreement's key function is to establish a joint arrangement of the Working Interests vis a vis the BLM and to select a Unit Operator. However, there are provisions of the Unit Agreement which need to be trumped by the JOA or will cause problems in the JOA. Therefore, it is critical that Article IX of the Unit Agreement be modified to establish that in the event of conflict between the JOA and the Unit Agreement that the Unit Agreement shall prevail. The key potential conflict issues are the following:

*Revenue and Cost Sharing* – Section 13.2 of the form Unit Agreement establishes that the benefits accruing under the Unit Agreement shall be shared by the Working Interest Owners in the Participating Area on a pro rata basis based on acreage in the Participating Area. As noted above, there may be other arrangements the parties have in mind for the sharing of benefits.

*Minority Rights* – The form Unit Agreement provides a scheme for giving some protection to minority interest holders covered by a Unit Agreement when it comes to the selection or replacement of the Unit Operator (See Articles VII and VIII of the Unit Agreement). The Working Interest Parties may have other ideas on how minority interests will be dealt with in the decision-making process so it will be important to override this language through the JOA.

*(c) Dealing with Private Party Lands and Related Interests in the Unit Agreement.*

It is important to note that because, *by statute*, the BLM has no authority to require the inclusion of private party lands in the Unit Agreement, parties to the Unit Agreement can not rely upon the BLM to enforce either the provisions of the Unit Agreement

or any requirements of federal laws and regulations applicable to Unit Agreements against such private party owners. In that regard, it is critical that the JOA (i) fully incorporate all terms and conditions of the Unit Agreement vis a vis such private parties so that whatever enforcement rights baked into the JOA can be applied against such private party in the event they violate the Unit Agreement, and (ii) make clear that all statutory and regulatory provisions enforceable against Working Interest Parties on BLM lands are equally enforceable against private parties on non-BLM lands. Moreover, in order to avoid any potential problems with any future interest holders in private party lands claiming they are not covered by a Unit Agreement because of the provisions of federal law indicating that private parties can not be forced into joining a Unit Agreement, documents evidencing the existence of the Unit Agreement and Joint Operating Agreement should be recorded in the county land records on the private party lands.

*(d) Other Provisions of Note*

The Unit Agreement incorporates some basic provisions of the statute and regulations that are worth noting. First, the Unit Agreement contains language requiring the submission of plans of development for approval by the BLM and prescribes the maximum time period between the drilling of wells before rights under the Unit Agreement may be lost. Second, the Unit Agreement sets forth provisions respecting the ability of parties to withdraw from the Unit Agreement (with BLM lands requiring BLM approval for withdrawal, and with other approval rights required for non-BLM lands). This is another area that may need to be addressed in the JOA to avoid private party withdrawal from Unit Agreements. Third, the Unit Agreement provides that if no JOA is entered into within 180 days of signing a Unit Agreement, that the BLM may impose one on the parties to the Unit Agreement. Since we would never recommend that any voluntary parties to a Unit Agreement sign a Unit Agreement without concurrent agreement on a JOA, this provision is primarily covers situations where the BLM is requiring entry into a Unit Agreement on a non-voluntary basis. Finally, the term of the Unit Agreement is five years and if a BLM lease covered in part or whole by a Unit Agreement is due to expire before the end of such five year term, it shall be extended to match the termination date of the Unit Agreement (note that there is some inconsistency between the Unit Agreement and BLM leases generally since the initial term of a BLM lease is ten years). In the event commercial use of the geothermal resource commences in such five year period, the Unit Agreement will extend for as long a period of time as the geothermal resource remains in commercial use.



