

Geothermal Payor Handbook—Class 2&3 Leases

Royalty Valuation Procedures

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Chapter 1

About This Handbook

1.1 Introduction

The Office of Natural Resources Revenue (ONRR), within the Department of the Interior, is responsible for ensuring the proper collection, accounting for, and disbursement of all revenues from Federal geothermal leases to the appropriate recipients. The Bureau of Land Management (BLM) administers 245 million acres or one-tenth of America's land base and 700 million acres of subsurface mineral estate. Other Federal agencies such as the Forest Service and Fish and Wildlife Service also manage some surface lands, while the BLM manages the Federal onshore subsurface. BLM sets the lease terms such as royalties and rentals while ONRR collects these payments and disburses them to the U.S. Treasury, states, and counties.

Geothermal revenues that ONRR collects include the following:

- Rents - some Class 3 leases require rentals regardless of producing status.
- Production royalties - for producing leases.
- Credits for in kind electricity delivery to states and/or counties - may be taken against production royalties.
- Direct use fee schedule.
- Advanced royalties - for cessation of production.
- Compensatory royalties for geothermal resources that are avoidably lost, wasted, or drained (as determined by BLM).

This handbook describes the regulatory methods of valuing Federal geothermal resources to determine production royalties for Class 2 and 3 leases. These same methods determine compensatory royalties as well. Royalty is due on the value of geothermal resources (including certain byproducts) produced, processed, removed, sold, or utilized from the lease, or reasonably susceptible to sale or utilization by the lessee or designated operator.¹

1.2 Introduction to New Geothermal Rules and Handbook

On May 2, 2007, ONRR issued new regulations (Title 30, Code of Federal Regulations (CFR) Parts 1202, 1206, 1210, 1217 and 1218) to implement the geothermal provisions of the Energy Policy Act of 2005 (EPAAct) governing the payment of royalty on geothermal resources produced from Federal leases and the payment of direct-use fees in lieu of royalties. The EPAAct provisions amend the Geothermal Steam Act of 1970 (GSA). Those regulations became effective on June 1, 2007.

This handbook supplements the geothermal regulations in 30 CFR Parts 1202, 1206, 1210, 1217, and 1218 (2007 forward). If there are inconsistencies between the

¹ This handbook does not apply to valuation of Indian geothermal resources unless the Indian geothermal lease otherwise provides for it.

regulations and this handbook, the regulations always take precedence. The 2007 regulations have the following new geothermal provisions from EPAct 2005 which:

1. Identify when credits against royalties are and are not allowable;
2. Explain how and when to pay advanced royalties;
3. Provide royalty reduction for existing leases that qualify for near term production incentives;
4. Provide new Product Codes for reporting with the direct use fee schedule;
5. Provide new Transaction Codes for in-kind deliveries of electricity to states or counties
6. Identify allowable deductions from royalty payments and how to calculate them;
7. Amend, streamline and re-write the existing sections of the regulations, promulgated in 1991, in plain English;
8. Explain the new percent of gross proceeds royalty calculation method for electrical generation lessees and the new direct use fee schedule for direct use lessees.
9. Gave current lessees the option of staying on the current royalty calculation method (usually netback) or converting to the new percentage of gross proceeds method within 18 months of the effective date of the new regulations. (June 1, 2007)

This handbook does not replace the regulations. You are responsible for the proper valuation, for royalty purposes, of Federal geothermal production. Accordingly, you should have a working knowledge of all governing regulations.

Concurrent with the publication of the ONRR Geothermal Valuation Rule in 2007, the BLM also published a final rule revising the BLM's existing geothermal resource leasing, operations, and unit agreement regulations to implement provisions of the Energy Policy Act.

The BLM 2007 geothermal rule is found at: 43 CFR Parts 3000, 3200, and 3280. ONRR collects royalties on three types of leases. ONRR defined these names to describe BLM leases from the BLM 2007 geothermal regulations, however, BLM does not use these terms for the different leases in their geothermal regulations, only ONRR does. ONRR wanted to make clear that there were differences in lease terms between pre and post-EPAct leases as follows:

Class 1 Leases

Class 1 lease means: (1) A lease that BLM issued before August 8, 2005, for which the lessee has not converted the royalty rate terms under 43 CFR 3212.25; or (2) A lease that BLM issued in response to an application that was pending on August 8, 2005, for which the lessee has not made an election under 43 CFR 3200.8(b).

Contains all the royalty provisions for existing leases: minimum royalty, rentals, byproduct royalty rates. The only new provisions that apply are the production incentives for new or qualified expansion production and credits for in kind delivery of electricity

Class 2 Leases

Class 2 lease means: A lease that BLM issued after August 8, 2005, but also includes leases issued in response to an application that was pending on August 8, 2005, and for which the lessee does not make an election under 43 CFR 3200.8(b).

Contains all new royalty rates, direct use fees, new rental rates, rental credits to royalties, new byproduct royalty rates, credit for in-kind delivery of electricity, and advanced royalties

Class 3 Leases

Class 3 leases are broken into **Parts A and B**. These parts are based on definitions found in ONRR regulations at 30 CFR 1206.351 and two options provided for in the BLM regulations at 43 CFR 3212.25, 3200.7, and 3200.8(b).

The ONRR regulations at 30 CFR 1206.351 define a *Class 3 lease* as: A lease that BLM issued before August 8, 2005 for which the lessee has converted to the royalty rate or direct use fee terms under 43 CFR 3212.25.

Under Class 3 as defined by ONRR, BLM allows for lessees to convert lease terms using either of two options.

Part A provides for the first option: Class 1 leases may be converted to modify lease terms to accept only the royalty rate or direct use fee terms provided for by EPOA under 43 CFR 3212.25.

Class 1 leases that only convert to the new royalty terms, i.e., royalty on electricity (% of gross proceeds, the royalty rate on electricity, which is determined on a case by case basis for existing producing leases. If not producing, then they will have the 1.75% royalty rate, direct use fees. Does NOT affect byproduct royalty rates, i.e., the old rates apply like in Class 1 leases.

Part B provides for the second option: Class 1 leases may be converted to modify lease terms by electing to accept all terms provided for at 43 CFR 3200.7 and 3200.8.

In effect, these are identical to Class 2 leases except for the royalty rate on electricity, which is determined on a case by case basis for existing producing leases. If not producing, then they will have the 1.75% royalty rate. See BLM regulations at 43 CFR 3212.25 and 3200.7(a)(2).

This handbook covers Class 2 and 3 leases. Class 1 leases are covered in the Geothermal Payor Handbook for Class 1 leases.

NOTE

Report geothermal royalties to ONRR using the monthly Report of Sales and Royalty Remittance (Form ONRR-2014). Once a geothermal lease begins commercial production, you must submit a Form ONRR-2014 for each month that your lease produces. Do not submit a Form ONRR-2014 for those months that your lease does not produce. You must, however, submit production and facility reports to BLM, which will verify your production volumes and forward them to ONRR.

For detailed geothermal royalty and other lease obligation payments reporting instructions and examples, see ONRR's *Mineral Revenue Reporter Handbook, Chapter 7-Geothermal*.

1.3 Using the Geothermal Payor Handbook, Class 2 and 3 Leases

We divided this handbook into the following chapters:

- **Chapter 2: Valuation Overview**
This chapter identifies geothermal resources that are subject to royalty and addresses minimum royalty requirements. It describes measurement standards for royalty reporting, reviews general valuation principles, defines terms crucial to valuation, and discusses housekeeping subjects that we could not easily accommodate in other chapters.
- **Chapter 3: Valuation Standards for Electrical Generation**
This chapter describes the requirements for valuing geothermal resources used to generate electricity.
- **Chapter 4: Valuation Standards for Direct Use**
This chapter describes the requirements for valuing geothermal resources used in direct-use processes.
- **Chapter 5: Byproduct Valuation**
This chapter describes the requirements for valuing byproducts and for determining byproduct transportation allowances.
- **Appendix A: Definition of Terms**
- **Appendix B: Important Addresses**
This section contains important ONRR addresses.

The first two chapters cover general concepts and are designed to be used in conjunction with the other chapters of the handbook. For example, if you are using gross proceeds less applicable deductions to value your production, you need to be familiar with the information in Chapters 1, 2, 3, and 4. If you are valuing direct use, you need to be familiar with Chapters 1, 2, and 5. If you are valuing byproducts, you need to be familiar with Chapters 1, 2, and 5.

We cite pertinent regulations and authorizing statutes throughout the text for legal cross-reference. For example, "30 CFR 1206.352 (b)(1)(i)" refers to the regulation in Title 30 of the Code of Federal Regulations, Part 1206, section 352, paragraph (b)(1)(i) that governs the valuation of electrical generation resources sold under arm's-length

contracts; likewise “30 U.S.C. 1001 et seq.” refers to the codification of the Geothermal Steam Act in Title 30 of the United States Code, section 1001 and following.

1.4 Nomenclature and Terminology

We use the following conventions throughout this handbook:

- **You:** The geothermal lessee, operator, royalty payor, or affiliate. Although a royalty payor may not be the lessee for a particular lease, a royalty payor has the same reporting and valuation obligations as the lessee (see the definition of lessee at 30 CFR 1206.351). The lessee is ultimately responsible for ensuring the proper reporting and paying of royalties.
- **We:** The Office of Natural Resources Revenue.

We use several specialized terms throughout this handbook; for example, *Arm’s-length Contract*, *Gross Proceeds*, *Byproduct*, and *Direct use*. In the new regulations, terms have been changed to reflect current valuation methods. For example, “net back” and “gross proceeds less deductions” are interchangeable in Chapter 4. You must be familiar with the definitions of all these types of terms in order to fully understand and properly use the valuation principles presented here. Definitions can be found in Appendix A or 30 CFR 1206.351.

1.5 Supplementary Payor Handbooks

The *Geothermal Payor Handbook—Product Valuation Class 1* and *The Geothermal Payor Handbook Class 2 and 3* are part of a series of ONRR handbooks containing information on Federal and Indian mineral valuation and royalty reporting requirements. Follow the instructions in the *Minerals Revenue Reporter Handbook*, Chapter 7, in order to establish your account with ONRR. Chapter 7 also contains detailed instructions for completing Form ONRR-2014 to report your geothermal royalties. As previously mentioned, you must submit a Form ONRR-2014, together with your royalty payment, each month, by the end of the month following production that you have commercial geothermal production.

1.6 Handbook Distribution

This handbook is available on the web at

<http://www.onrr.gov/ReportPay/PDFdocs/geopayor.pdf>.

Chapter 2

Valuation Overview

Royalty valuation of Federal geothermal resources draws its authority from the Geothermal Steam Act of 1970 (30 U.S.C. 1001 *et seq.*) as amended by The Energy Policy Act of 2005 (EPAAct 2005). The acts provide for payment of royalties to the U.S. Government on the amount, or value, of geothermal resources derived from production under the lease and sold or used, or reasonably susceptible to sale or use, as determined by the BLM. For practical reasons, and unless otherwise permitted by lease arrangements, you pay royalties on the value of produced geothermal resources as follows:

$$\text{Royalty} = \text{Royalty Rate} \times \text{Value of Production}$$

2.1 New Royalty Provisions Under the 2007 Regulations

The new regulations in 2007 changed to a new “percentage of gross proceeds from the sale of electricity” royalty method. (43 CFR 3211.17)

- Class 2 and converted non-producing Class 3 leases royalty rates are 1.75% of gross proceeds for the first 10 years, and 3.5% thereafter.
- Current lessees at the time had the option of staying on the current royalty calculation method or converting to the new percentage of gross proceeds method within 18 months of the effective date of the new regulations. This election has expired.
- BLM assigned a lease royalty rate to producing converted Class 3 leases.
- The new lease royalty rate for converted Class 3 producing leases was calculated by BLM such that the royalty revenues received by ONRR should be the same as what would have been received under the former regulations’ valuation methods for 10 years as mandated by the EPAAct 2005.
- Allow all classes of lessees a credit against royalties owed on geothermal resources for delivery of electricity “in-kind” to states and counties that receive a portion of royalty revenues rather than full payment in monies. (30 CFR 1218.306)
- For Class 2 and Class 3 leases that converted their royalty terms, allow credits against royalty payments for annual rentals paid before the first day of the year for which the rental is due. Rentals always due. (30 CFR 1218.303) There is no minimum royalty for Class 2 and 3 leases. (43 CFR § 3211.21)
- For Class 2 and Class 3 leases that converted their royalty terms, require payment of advanced royalties for cessation of production. These payments will be credited against royalties owed once production starts again. (30 CFR 1218.305)
- For Class 1 lessees only, provide for a 50 percent reduction in royalty, for four years, on any new production or qualified expansion projects for current lessees that do not modify their lease terms to the new calculation method. (30 CFR 1218.307)
- For Class 2 and Class 3 leases that converted their royalty terms, establish a fee

schedule, in lieu of royalties, for lessees that do not sell the geothermal resource and use it for a purpose other than the commercial generation of electricity (direct use lessees). (30 CFR 1206.356)

- Lessees have the option to stay on the current royalty method or convert their lease terms to the fee schedule method within 18 months of the effective date of the fee schedule.(43 CFR 3212.25)

You determine the value of production by the regulations in 30 CFR 1206.350–1206.366 and the instructions in this handbook. As used in this handbook, *value of production*, *royalty value*, or simply *value* all have the same meaning and always refer to the value on which you pay royalties.

2.2 Applicability of Valuation Standards

The valuation standards and procedures we describe in this handbook apply to the following:

- Geothermal resources that you produce from Federal leases that the Bureau of Land Management (BLM) issued under the Geothermal Steam Act.
- Indian minerals agreements that you entered into under the Indian Mineral Development Act of 1982 (25 U.S.C. 2101-2108), by default unless otherwise addressed in the agreement. (See 25 CFR Part 225).

Use these standards and procedures to determine the royalty value of geothermal production beginning June 1, 2007.

Geothermal Resources,” which the Geothermal Steam Act² calls “geothermal steam and associated geothermal resources,” are as follows:

- All products of geothermal processes, including indigenous steam, hot water, and hot brines.
- Steam and other gases, hot water, and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations.
- Heat or other associated energy found in geothermal formations.
- Byproducts: Minerals (exclusive of oil, hydrocarbon gas, and helium), found in solution or in association with geothermal steam, that no person would extract and produce by themselves because they are worth less than 75 percent of the value of the geothermal steam or because extraction and production would be too difficult.

2.3 Geothermal Production Requiring Royalty Valuation

You must determine the value of, and pay royalties on, all geothermal resources—including byproducts—that are either: a) produced from a Federal geothermal lease and sold or used, or reasonably susceptible to sale or use, as determined by the BLM or b) avoidably lost, wasted, or drained from a lease (BLM-determined).

² The Geothermal Steam Act authorizes the Department of the Interior to issue geothermal leases only on certain Federal lands, namely public domain lands, acquired lands, and lands with minerals reserved to the Federal Government; the act excludes issuance of geothermal leases on Indian lands.

You determine the royalty value of geothermal resources that you avoidably lost, wasted or drained from a lease in the same manner as if you sold or used them, using the valuation standards in 30 CFR 1206.350-1206.366.

You must also pay royalty on insurance or other compensation received for geothermal resources that are unavoidably lose, unless the compensation is through self-insurance.

You don't determine the value or pay royalty on geothermal resources that are as follows:

- Unavoidably lost, as BLM determines (unless you receive insurance or other compensation as indicated above).
- Rejected, as BLM approves.
- Used to generate electricity for internal operations (parasitic electricity) in your own or your affiliate's power plant, or to generate electricity returned to the lease for lease operations; however, if a power plant uses geothermal resources from more than one lease, or uses unitized or communitized production, you may use only that proportionate share of each lease's production—either actual or allocated—royalty free.
- Commercially de-mineralized water used for power plant operations or for lease or unit operations; again, you may use only a lease's proportionate share of commercially de-mineralized water—either actual or allocated—royalty free.
- Byproducts placed in stockpiles, added to inventories, or otherwise disposed of without financial benefit to you; byproducts disposed of without financial benefit to you generally include those that are not reasonably susceptible to sale or utilization and those classified as hazardous waste.

NOTE

You have an implied obligation to market or use geothermal resources, including byproducts, to the mutual benefit of yourself—as the lessee—and the Federal Government—as the lessor. Disposal of geothermal resources without financial gain to you will incur a royalty obligation when they are reasonably susceptible to sale or utilization. Thus, if you give away geothermal resources for the convenience of disposal, and the recipient secures financial gain or benefit from the disposed resource, you must pay royalty on the value of that disposed resource. Contact ONRR at the address given in Appendix A for a royalty determination if you encounter this circumstance.

Regulations covering royalty-bearing production appear at 30 CFR 1202.351.

2.4 Timing of Valuation and Royalty Payments

Once you place a lease into production, you must report and pay royalties on Form ONRR-2014 for each month's production. Except as described in the following note, this means that you determine value for each calendar month's cumulative production attributable to each sales type code reported on Form ONRR-2014. You

must pay royalties by the end of the month following the month of production (30 CFR 1210.353); see Chapter 7 of the *Minerals Revenue Reporter Handbook* for further details.

You do not have to submit a Form ONRR-2014 for months during which you do not produce.

You must satisfy the minimum royalty requirement that the geothermal lease established (usually \$2.00 per acre) each lease year (30 CFR 1202.352). If the royalties paid on monthly production during the lease year are less than the minimum royalty, you must pay the difference to ONRR on or before the expiration date of the lease year (see Geothermal Resources Lease at Sec. 2 and BLM regulations at 43 CFR 3211.21). We allow a grace period only to the last day of the month of the lease year. Report minimum royalty payments on Form ONRR-2014 using transaction code 02.

If near the end of the lease year your projected royalties are less than the minimum royalty you may make an estimated minimum royalty payment to ONRR, and you may recoup any overpayment resulting from the estimated minimum royalty payment. Contact your designated ONRR representative at 1-800-525-0309 for further information regarding minimum royalties and recoupments.

2.5 Reporting Codes

When reporting geothermal royalties on ONRR Form 2014, there are product codes, sales type codes, and transaction codes that you must use:

2.5.1 Product Codes

Use the following product codes to report geothermal fluids used to generate electricity (electrical generation resources).

Product code	Description
31	Electrical generation, kWh
32	Electrical generation, thousands of pounds (generally applicable only to dry steam resources)
33	Electrical generation, MMBtu
34	Electrical generation, other measurement unit approved by ONRR
35	Direct use, MMBtu
36	Direct use, hundreds of gallons
37	Direct use, other
38	Commercially demineralized water, reported in hundreds of gallons
41	Sulfur, reported in long tons (replaces product code 19 for geothermal sulfur)

42	Carbon dioxide, reported in thousands of cubic feet (Mcf)
43	Silica, reported in pounds
44	Other geothermal byproduct not listed above; contact MMS for unit of measure
45	Direct use, millions of gallons
46	Direct use, millions of pounds

5.2.2 Sales Type Codes

Use the following sales type codes to report royalties on geothermal production:

Sales type code	Description
ARMS	Geothermal resources sold under an arm's-length sales contract
NARM	Geothermal resources not sold under an arm's-length contract

You can use sales type codes singularly or in combination, depending on the resource's disposition. Report different sales type codes on separate lines.

5.2.3 Transaction Codes

Use the following transaction codes to report geothermal royalties on the value of production or on proceeds associated with production:

Transaction Code	Description
01	Royalty on value of production
02	Minimum royalty payment
03	Estimated royalty payment
04	Rental
05	Recoupable rent
10	Compensatory royalty on value of drained, avoidably lost, or wasted production
11	Byproduct transportation allowances
14	Royalty on severance tax and other production tax reimbursements
16	Direct use fees
32	Advanced royalty payment
33	Advanced royalty recoument
C1	100% Federal Credit Burden
C2	Shared Credit Burden
C3	State in Lieu Of
C4	County in Lieu Of

53	Royalty on payments or reimbursements for effluent and other fluid injection
54	Royalty on payments or reimbursements for geothermal field operations, other than effluent and other fluid injection

2.6 Units of Measurement

2.6.1 Units of Measurement for Electrical Generation

The units of measurement used to report royalties are dependent on how the resource is used.

For geothermal resources used to generate electricity and valued under an arm's-length contract, you report production quantities on Form ONRR-2014 in the following units (30 CFR 1202.353(a)):

Contract-Specified Unit of Measurement	Quantity Measured	Sales Volume Reported to ONRR
Thousands of Pounds (Mlb)(PC 32)	1,192,573(lbs)	1,192.57(1000's lbs)
Millions of Btu (MMBtu)(PC33)	34,197,054(Btu)	34.1974(MMBtu)

- Sales Volume Reported to ONRR is in thousands of pounds (Mlb) of steam to the nearest whole thousand pounds, if the contract specifies payment in terms of mass or weight.

If you use the geothermal resource in your own power plant to generate electricity, you report production quantities on Form ONRR-2014 in the following units (30 CFR 1202.353(b)):

Contract-Specified Unit of Measurement	Quantity Measured	Sales Volume Reported to ONRR
kilowatt-hours(kWh)(PC 31)	38,755.257(mWh)	38,755,257 (kWh)

- Kilowatt-hour (kWh) to the nearest whole kilowatt-hour if the contract specifies payment in terms of the generated electricity.

2.6.2 Units of Measurement for Direct Use Fee Schedule

For geothermal resources used in direct-use processes, you use the following units of measurement to report production quantities on Form ONRR-2014 (30 CFR 1202.353(b)):

Contract-Specified Unit of Measurement	Quantity Measured	Sales Volume Reported to ONRR
Millions of Gallons(PC 45)	57,892,345 (gal)	58 (MMgal)
Millions of pounds(MMlb)(PC 46)	34,197,053 (MMlb)	34,197,053 (MMlb)
Geothermal Direct Use Other (PC 37)	---	---

2.6.3 Units of Measurement for Byproducts and Product Codes

For byproduct minerals **except** sulfur, you use the units of measurement (such as ounces, pounds, or tons) given in ONRR’s *Minerals Revenue Reporter Handbook* (30 CFR 1202.353(c)). You report sulfur on Form ONRR-2014 in long tons (2,240 lb.) using product code (PC) 41, carbon dioxide in thousands of cubic feet (Mcf) PC 42, silica reported in pounds (lbs) PC 43, other geothermal byproducts PC44.

2.6.4 Units of Measurement for Commercially De-mineralized Water

You report the quantity of commercially de-mineralized water, on which royalty is due, on Form ONRR-2014 in hundreds of gallons to the nearest hundred gallons (PC 38) 30 CFR 1202.353(d).

2.7 Quality Measurements

Quality refers to the physical and chemical properties of the resource. You do not report quality measurements to ONRR for geothermal resources or byproducts (30 CFR 1202.353(e)). However, you must maintain quality measurements for audit and valuation purposes, particularly if valuing alternative fuels for direct use resources. Quality measurements include—but are not limited to—temperatures, pressures, enthalpies, and chemical analyses of geothermal fluids or chemical analyses, weight percent, or other purity measurements of byproducts.

2.8 General Valuation Principles

Royalty valuation’s basis comes from the concept that the best determination of value is the gross proceeds that you generate under an arm’s-length contract for the sale or purchase of the resource in marketable condition. Because prevailing market forces determine prices in arm’s-length contracts, we view arm’s-length prices as the best measure of market value. As a general rule, the prices that you establish in your arm’s-length sales contracts—and the gross proceeds that you derive from them—are acceptable for royalty valuation.

If you cannot sell either electricity or the geothermal resource through an arm’s length contract you must refer to 30 CFR 1206.352 for the sale of electricity, or 30 CFR 1206.357(b)(2 or 3) for byproduct materials.

If you cannot calculate royalties using gross proceeds from arm's length sales, royalties can be calculated using several methods. You may request a valuation determination from ONRR regarding any geothermal resource produced from a federal lease.

NOTE

When you sell the resource under a contract, value for royalty purposes can never be less than your gross proceeds accruing under that contract, regardless of the value you compute.

2.8.1 Arm's-Length Contract

An "arm's-length contract" is a contract or agreement arrived at in the marketplace between independent, non-affiliated persons with opposing economic interests regarding that contract. To be considered arm's length for any production month, a contract must satisfy this definition for that month, as well as when that contract was executed. (30 CFR 1206.351). An Affiliate means a person who controls, is controlled by, or is under common control with another person. Persons who are related either by blood or by marriage are also affiliated. The determination of the term "control" comes from the percentage of ownership of the entity's voting securities or other forms of ownership, as follows:

1. Ownership or common ownership in excess of 50% of the voting securities, or instruments of ownership, or other forms of ownership constitutes control.
2. Ownership of 10-50% of the voting securities, instruments of ownership, or other forms of ownership of another person. ONRR will use the following factors to determine whether there is control under the circumstance of a case:
 - i) The extent of common officers or directors
 - ii) With respect to voting securities, or instruments of ownership, or other forms of ownership: the percentage of ownership in common or common ownership, the relative percentage of ownership or common ownership compared to the percentage(s) of ownership by other persons, whether the person is the greatest single owner, or whether there is an opposing voting block of greater ownership
 - iii) Operation of a lease, plant, pipeline or other facility
 - iv) The extent of participation by other owners and day-to-day management of a lease, plant, pipeline, or other facility
 - v) Other evidence of power to exercise control over a common control with another person
3. Ownership of less than 10% creates a presumption of non-control, which ONRR may rebut.
4. Persons who are related either by blood or by marriage are also affiliated.

If the sales contract fails the arm's-length criteria, then it is "not-arm's-length." You have the burden of demonstrating that your contract is arm's-length. ONRR may require you to certify that the provisions of your arm's-length contract include all of the consideration that your buyer will pay, either directly or indirectly, for the geothermal resource (30 CFR 1206.361(d)).

If you have questions about whether your sales contract is arm's length, please contact the Royalty Valuation mailbox at royaltyvaluation@onrr.gov.

2.8.2 Gross Proceeds

"Gross Proceeds" is the total monies or other consideration that you receive for any disposition of the geothermal resource (30 CFR 1206.351). Gross proceeds includes not only the revenue received under your sales contract, but also non-cash benefits (consideration) accruing both within and outside the sales contract. Thus, gross proceeds includes—but is not limited to—the following:

- Payments to the lessee for certain services such as effluent injection, field operations and maintenance, drilling or workover of wells, or field gathering to the extent that the lessee is obligated to perform such functions at no cost to the Federal Government;
- Reimbursements for production taxes and other taxes. Tax reimbursements are part of gross proceeds accruing to a lessee even though the Federal royalty interest may be exempt from taxation; and
- Any monies and other consideration, including the forms of consideration identified in this paragraph, to which the lessee is contractually or legally entitled but which it does not seek to collect through reasonable efforts.

"Gross Proceeds" can have multiple meanings depending on its context. In most cases, gross proceeds is the product of contract price and quantity (that is, your revenue), as follows:

$$\text{Gross Proceeds} = \text{Contract Price} \times \text{Quantity}$$

In some cases, gross proceeds may refer to a contract price, such as dollars or mills per kilowatt-hour (a mill is one-thousandth of a dollar, or \$0.001). Gross proceeds can also refer to a computed, weighted average price. When you receive other consideration which would normally be the responsibility of the producer, gross proceeds includes the other consideration; for example:

$$\text{Gross Proceeds} = \text{Contract Price} \times \text{Quantity} + \text{Other Considerations provided to you}$$

Other considerations may be any of the items listed above, may be manifested as monetary payments or non-cash benefits, and may be identified in either the sales contract or another agreement.

You may agree to a reduced price in your sales contract in exchange for the purchaser's maintenance of lease facilities negotiated in a separate agreement. In this situation, your gross proceeds determined from your contract price would be adjusted upwards to reflect the services provided by the purchaser.

If you are aware of any additional consideration occurring outside the sales contract, or you have questions regarding reimbursements or other consideration received under

your sales contract, please contact the Royalty Valuation mailbox at royaltyvaluation@onrr.gov. Explain the circumstances under which the consideration occurs, and either propose a valuation procedure or request guidance.

2.8.3 Exceptions to Acceptance of Arm's-Length Gross Proceeds

You are obligated to negotiate contracts in a prudent manner and receive the best possible price to the mutual benefit of yourself and the Federal Government. Although a contract may be arm's-length, two exceptions may negate the acceptance of gross proceeds as value:

1. The contract does not reflect the total consideration passing between the buyer and seller.
2. The gross proceeds does not reflect the reasonable value of the resource because of misconduct by or between you and your purchaser, or because you have otherwise breached your duty to market the production to the mutual benefit of yourself and the Federal Government. Misconduct or breach of duty may include, but is not limited to, collusion between you and your purchaser, negligence in negotiating contracts, or pricing practices found by a court or regulatory authority to be incorrect or fraudulently manipulated.

We may direct you to use other valuation methods if we encounter either of these exceptions. Regulations addressing the acceptability of arm's-length gross proceeds appear at 30 CFR 1206.361 (b)-(f)

2.8.4 Marketable Condition and Marketing

You must place geothermal production in marketable condition at no cost to the Federal Government. *Marketable condition* means lease products that are sufficiently free from impurities and otherwise in a condition acceptable to a purchaser under a sales contract typical for the disposition from the field or area of such lease products.

Placing production in marketable condition includes, but is not limited to:

- Measuring
- Gathering
- Delivery to a power plant, direct use facility, or purchase point
- Liquid-vapor phase separation
- Condensate or moisture removal
- Purification
- Any other physical handling and treatment of the resource necessary to meet the delivery specifications of the contract.

You cannot deduct the costs of placing production in marketable condition.

A sales contract may require you to deliver steam to the inlet of the purchaser's power plant with specified minimum moisture content. To meet the contract specifications, you construct pipelines to gather and deliver the steam and install moisture separators to

purify the steam. Because you are placing the produced geothermal resource in a (marketable) condition acceptable to the purchaser, you cannot deduct the costs of these services from the value.

If your purchaser or another party performs services for you and reduces your gross proceeds accordingly, either through a lower sales price or some other mechanism, you must adjust your gross proceeds upward to offset the reduction.

EXAMPLE 2-1

Your contract establishes the following prices and fees per Mlb:

Sales price of steam delivered to the inlet of the purchaser's power plant	\$ 1.500
Less fees for condensate removal	-0.050
Less fees for metering and well-control services	-0.005
<u>Less fees for gathering to the power plant</u>	<u>-0.150</u>
Net price per Mlb delivered	\$1.295

Although net price (\$1.295) determines your sales revenues, the purchaser's fees are not allowable deductions in determining your gross proceeds. Thus, the unit value of production for royalty purposes in this example is the full contract sales price of \$1.500/Mlb. Calculate your gross proceeds as follows:

$$\text{Gross Proceeds} = \$1.50/\text{Mlb} \times \text{MBL Delivered}$$

You cannot deduct the costs of brokering or marketing your geothermal resources from royalty value, whether you perform these services yourself or pay someone else to do them for you.

2.9 Audits and Record Keeping

All royalty payments and the information on which you calculate them are subject to audit, review, reconciliation, and monitoring (30 CFR 1206.361). You must maintain sufficient, verifiable records and data to support your value determinations and royalty payments (30 CFR 1212.351).

Chapter 3

Valuation Standards for Electrical Generation

This chapter describes the standards in 30 CFR 1206.352 for valuing geothermal resources used to generate electricity. These resources generally consist of steam, hot water, and hot brines. ONRR valuation standards classify contracts for the sale according to the resource's disposition:

- You sell geothermal resources under an arm's-length contract.
- You do not sell your geothermal resources but use them to generate electricity in your own power plant.

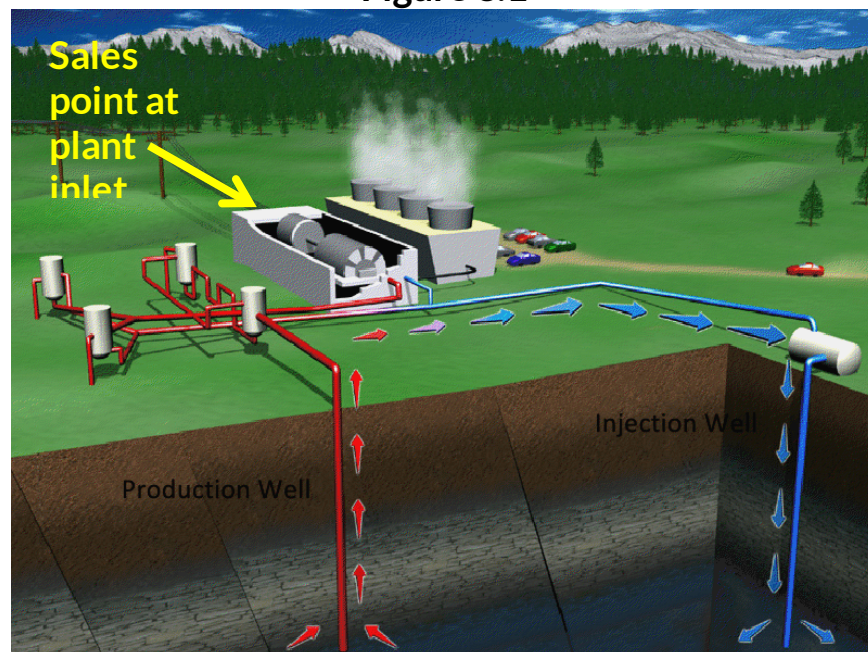
Valuation standards for resources sold under an arm's-length contract focus on the contract's gross proceeds, with the conditions that the gross proceeds reflect total consideration and reasonable value. (See "Exceptions to acceptance of arm's-length gross proceeds" on page 2-11.)

3.1 If You Sell Geothermal Resources at Arm's- Length that the Purchaser Uses to Generate Electricity

As a general rule, you determine the value of the electrical generation resources sold under an arm's-length contract as the gross proceeds accruing under that contract and the regulations at 30 CFR 1206.352. After gross proceeds are determined you calculate the royalty on the resource one of two separate ways. You take the gross proceeds times the lease royalty rate, or gross proceeds times the royalty rate BLM prescribes.

$$\text{Royalty} = (\text{Lease}) \text{ Royalty Rate} \times \text{Value of Production}$$

Figure 3.1



Example 3-1: Valuing Geothermally- Produced Electricity Sold Under an Arm’s-Length Contract to a Power Plant.

As a lessee of a Federal lease, you sell geothermally- produced electricity from your own power plant to a non-affiliated power purchaser. Your Class 2 lease royalty rate is 1.75%.

Summary Data

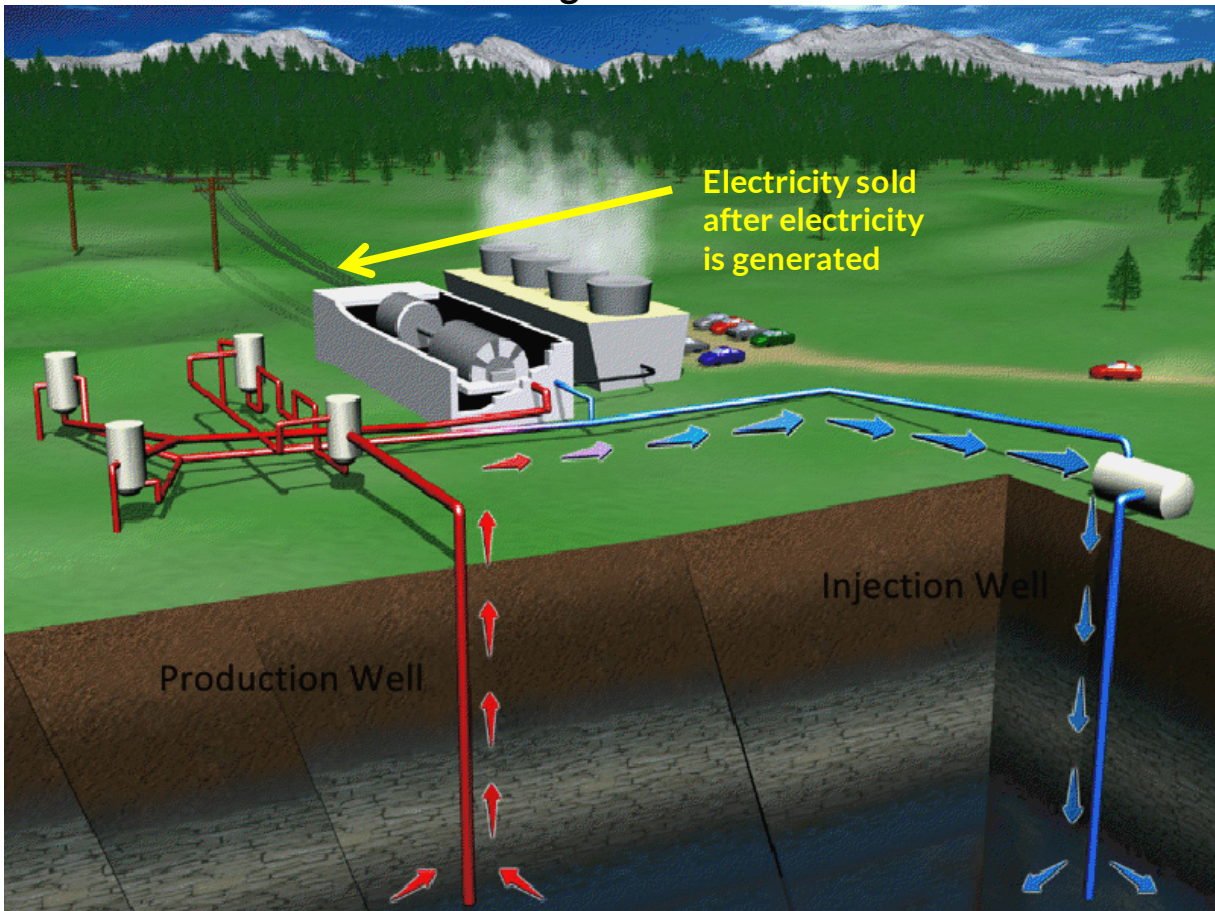
Lease	Contract	Contract Type	Production kWh	Price (\$/kWh)	Gross Proceeds (\$)
Federal	Green Energy Inc.	Arm’s length (AL)	1,402,000	0.04	56,080

Form 2014 Entries

Sales Volume 1,402 lbs
 Sales Value \$56,080
 Royalty Value Prior to Allowances $\$56,080 \times 0.0175 = \981.40

3.2 If You Use the Geothermal Resources in Your Own Power Plant for the Generation and Sale of Electricity- Percent of Gross Proceeds Method.

Figure 3.2



This method of valuing geothermal resources is known as “the percent of gross proceeds method.” As a general rule, for Class 2 and some Class 3 leases, you determine the value of geothermal resources used to generate electricity in your own power plant as the gross proceeds accruing to you from the arm’s-length sale of electricity times the lease royalty rate or the rate that the BLM assigns you (30 CFR 1206.352). However, you must satisfy the following two conditions to justify the contract gross proceeds (or contract prices) as value:

1. The sales contract must reflect the total consideration actually transferred, either directly or indirectly, from the buyer to the seller (30 CFR 1206.361(b)). Total consideration is synonymous with the full definition and intent of gross proceeds as discussed in section 2.7.2 *Gross Proceeds*. However, the value can never be less than the gross proceeds, including any additional consideration you receive. We may require you through audit to certify that your arm’s-length contract includes all of the consideration paid to you by the buyer, either directly or indirectly, for the geothermal resource.
2. The gross proceeds received under the contract must reflect reasonable value (30 CFR 1206.361(b)). If ONRR determines through audit that the gross proceeds do not reflect the reasonable value of the resource because of misconduct by or between the contracting parties, or because you have otherwise breached your duty to market the production to the mutual benefit of yourself and the Federal Government, ONRR may require you to increase the gross proceeds to reflect any additional consideration. ONRR may require you to use another valuation method in the regulations applicable to dispositions other than under an arm’s-length contract.

Example 3-2: Valuing Electricity produced from your unit in your own power plant using your own geothermal resources

- The lease is in a unit and has an allocation factor of 43 percent.
- The production/sales month is October 2016.
- You use the geothermal production in your own power plant and sell the generated electricity to a local utility. Royalties are based on a percentage of the gross proceeds from electricity sales with a 1.75% royalty rate for the first 10 years.
- During the month you delivered 32,845,600 kWh of electricity and receive \$1,642,280.00.
- Lease allocations:
 - Delivered electricity 14,123,608 kWh (32,845,600 kWh x 0.43)
 - Gross proceeds \$706,180.40 (\$1,642,280 x 0.43)
 - Royalty value \$12,358.16 (\$706,180.40 x 1.75%)
- For all leases, report the gross proceeds from the sale of electricity as the “Sales Value” on the Form ONRR-2014.

Product Code	Sales Type Code	Sales MO/YR	Transaction Code
31	NARM	102016	01

Sales Volume	Sales Value	Royalty Value Prior to Allowances
14123608	706180.40	12358.16

3.2.1 Electricity Value

The *electricity value* is the total amount of revenues (gross proceeds) that you receive under your sales contract for the delivery of electricity during your accounting month. In most cases this amount includes your energy payment, capacity payment, and bonus capacity payment. Any other monies or consideration exchanged for the delivery of electricity may also affect the electricity value; the principles of total consideration and reasonable value apply to electricity sales as they do to the sales of geothermal fluids.

Allocating Value to Leases

The percent of gross proceeds procedure derives the royalty value of all Federal geothermal resources that a power plant uses. If you use geothermal resources from more than one lease, you must allocate the value to each lease based on one of the following:

- The proportion of measured wellhead or lease production, as the Bureau of Land Management (BLM) approves.
- The allocation schedule in your unitization or communitization agreement, as BLM approves.
- Any other measurement or allocation method that BLM approves.

3.3 Advanced Royalty

ONRR allows for advanced payment of royalties if production ceases in order to hold Class 2 and 3 leases. Below are instructions on how to pay advanced royalties. If you are required to pay advanced royalties under 43 CFR § 3212.15(a)

To retain your lease:

- A. You must pay an advanced royalty monthly equal to the average monthly royalty you paid under 30 CFR part 206, subpart H for the last 3 years the lease was producing. If your lease has been producing for less than 3 years, then use the average monthly royalty payment for the entire period your lease has been producing continuously;
- B. ONRR must receive your advanced royalty payment prior to the first day of each month for which production has ceased;
- C. You may credit any advanced royalty you pay against your future production royalties recouped after your lease resumes production. You may not reduce the amount of any production royalty paid for any year below zero.

Example 3-3: Advanced royalties for cessation of production.

This example shows how to calculate advanced geothermal royalties.

Assumptions:

- The royalty rate is 12 ½ percent.
- The production/sales month is October 2016, and production has ceased.
- Production started in October, 2006 and continued until August, 2016.
- You sell steam to a nonaffiliated owner of a geothermal power plant.
- The sales contract establishes a geothermal value of \$0.015 per net kWh of generated electricity.
- The average pay statement from the month of first production (October, 2006) is 26,140,500 kWh of net electricity generated. You received an average payment of \$392,107.50 for the steam.

Form ONRR 2014 Fact Sheet

Product Code	Sales Type Code	Sales MO/YR	Transaction Code	Royalty Value
31	ARMS	102016	32	49013.44

Please contact ONRR Royalty Valuation at royaltyvaluation@onrr.gov if you have any questions on how to do these calculations.

3.4 Credit for “in-kind” delivery of electricity to states or counties

All lessees may take a credit against royalties owed on geothermal resources for delivery of electricity “in-kind” to states and counties that receive a portion of royalty revenues rather than full payment in monies.

Please contact ONRR Royalty Valuation at royaltyvaluation@onrr.gov if you have any questions on how to do these calculations.

3.5 Improper Valuations

If during an audit or compliance review ONRR finds that you improperly determined value, we will direct you to correct your value or prescribe a different valuation procedure (30 CFR 1206.361(a)). You will be liable for any difference between the royalties paid and the royalties due under the value that ONRR determines, plus late payment interest on underpaid amounts pursuant to 30 CFR 1218.302. If the corrected value or prescribed valuation procedure results in an overpayment, ONRR will give you instructions for taking a credit. You are not entitled to interest on royalty overpayments.

A value determination by ONRR is not an appealable decision or order under 30 CFR part 1290. If you received an order requiring you to pay royalty on the same basis as the value determination, you may appeal that order under 30 CFR part 1290.

3.6 How Do I Request a Value Determination or Gross Proceeds Determination?

If you are unsure of your valuation procedure, you may request a value determination from ONRR (30 CFR 1206.364). Send your valuation requests to us at the address given in Appendix A. Include a description of your operation, copies of sales contracts, and any other information pertinent to the valuation of your geothermal production. You must continue to pay royalties on production while we make our value or gross proceeds determination.

If you request an alternative valuation method, you must propose the valuation method you intend to use and include all information supporting your proposal. Remember, you must receive our approval to use an alternative valuation method and explain why the first method (netback) is unworkable. You may use your proposed valuation method for royalty calculations until we issue a decision. If we approve your proposed valuation method, you must use that method until one of the following occurs:

- The circumstances of your production and/or utilization change, at which time you must notify us with a new valuation request.
- ONRR instructs you to use a different valuation method.
- ONRR issues new valuation regulations.

If ONRR disapproves your proposed valuation method, we will prescribe a method to you. You must then adjust all your past royalty reports to reflect the prescribed method (30 CFR 1206.364). If our prescribed method results in additional royalty due, you must pay the additional royalty plus interest. If our prescribed method results in royalty overpayments, we will give you instructions for taking a credit against future royalty payments. You are not entitled to interest on royalty overpayments. Please contact ONRR Royalty Valuation at royaltyvaluation@onrr.gov.

3.7 Recordkeeping and Availability

You must save all data and records relevant to your royalty valuation (30 CFR 1206.360). Therefore, keep the following documents:

- All contracts related to the sale or purchase of geothermal resources.
- All contracts related to the sale, purchase, generation, and transmission of electricity generated from the geothermal resource.
- Any other contracts or other items that may bear on the valuation of the resource or are necessary to support your valuation.
- All ONRR valuation decisions and other written communications relevant to your valuation.
- Records of capitalized costs and equipment to support netback calculations.

For Federal geothermal leases, you must keep records relevant to your monthly royalty calculations for six years after the records are generated, unless we instruct otherwise. For Indian geothermal leases, records must be kept without a time limit as there is no statute of limitation for these leases unlike Federal leases.

These records include, but are not limited to, quantities produced and/or sold and prices received for sales of the resource. For netback valuation, keep your value calculations and all source documents supporting your claimed costs. You must make all records, contracts, and other documents supporting your valuations available to authorized ONRR personnel or ONRR-designated agents upon request (30 CFR 1206.360). See also 30 CFR 1212.351.

3.8 Dismantlement Cost Refunds

At the end of your project's life, and upon completion of dismantlement and salvage operations, you may take a one-time annual *dismantlement cost refund* of royalties equal to the royalty amount of actual power plant and transmission line dismantlement costs that exceed your salvage income (30 CFR 1206.353(o) and 1206.354(o)). Calculate the refund as follows:

$$\text{Dismantlement Cost Refund} = \text{Royalty Rate} \times (\text{Dismantlement Costs} - \text{Salvage Income})$$

Contact the ONRR royalty valuation group for instructions on taking the refund at royaltyvaluation@onrr.gov.

Chapter 4

Valuation Standards for Direct-Use

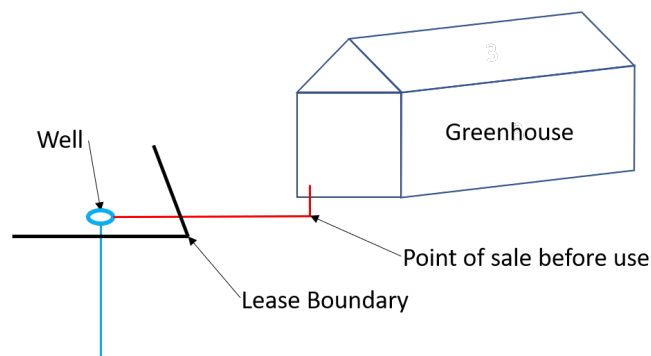
This chapter describes the standards in 30 CFR 1206.355 and 30 CFR 1206.356 for valuing geothermal resources that you use in direct-use processes for Class 2 & 3 leases. For direct use valuation for Class 1 leases, please see the Geothermal Payor Handbook- Class 1 leases. Direct-use includes commercial and residential space heating; greenhouse heating; industrial and agricultural operations requiring process heat; and other operations where thermal water is the heat source. These resources usually involve warm to hot water and the heat that they produce. Valuation standards group according to the resource's disposition as follows:

- Sales under an arm's-length contract
- Use by the lessee in the lessee's own direct-use facility

Valuation standards for resources that you sell under an arm's-length contract focus on the contract's gross proceeds with the conditions that the gross proceeds reflects total consideration and reasonable value (see "Exceptions to Acceptance of Arm's-Length Gross Proceeds" in Chapter 2).

We refer to geothermal resources that you use in direct-use processes as "Direct-Use Resources."

4.1 Arm's-Length Sales



If you sell geothermal resources produced from Class 1, 2, or 3 leases at arm's length to a purchaser for direct use, then the royalty on the geothermal resource is the gross proceeds accruing to you from the sale of the geothermal resource to the arm's-length purchaser multiplied by the royalty rate in your lease or that BLM prescribes under 43CFR 3211.18.

You generally determine the value of direct-use resources that you sell under an arm's-length contract as the gross proceeds accruing under that contract (30 CFR 1206.355). See "General Valuation Principles" in Chapter 2 for additional discussion on arm's-length contracts and gross proceeds.

The sales contract must reflect both a reasonable value and the total consideration that the buyer actually transferred, either directly or indirectly, to the seller (30 CFR 1206.361(b)).

1. ONRR may determine that the gross proceeds do not reflect the reasonable value of the resource because of misconduct by or between the contracting parties, or because you have otherwise breached your duty to market the production to the mutual benefit of yourself and the Federal Government.
2. ONRR may determine that the contract does not reflect that the total consideration is synonymous with the full definition and intent of gross proceeds, as discussed in Chapter 2.

If the contract does not reflect a reasonable value or the total consideration, ONRR may require you to increase the gross proceeds to reflect any additional consideration. Alternatively, for Class I leases, ONRR may require you to use another valuation method in the regulations applicable to dispositions other than under an arm's-length contract. ONRR will notify you to give you an opportunity to provide written information justifying your gross proceeds.

Example 4.1: Arm's Length Sales

This example shows how to calculate royalties for an arm's length sale of geothermal resources to a direct use facility.

Assumptions:

- The royalty rate is 10%
- The production sales month is October 2017.
- You sell steam to a nonaffiliated owner of a geothermal greenhouse. The sales contract establishes a price of \$0.015 per thousands of lbs. of steam.
- The pay statement for the month shows 26,140,500 lbs. of steam.

Form ONRR 2014 Fact Sheet

Product Code	Sales Type Code	Sales MO/YR
32	ARMS	062016

Sales Volume	Sales Value	Royalty Value Prior to Allowances
26140500 lbs.steam	\$392107.50	\$39210.75

How to calculate royalty value prior to allowance:

Sales Volume * Price * Royalty Rate

$$26140500 \text{ lbs.steam} * \$0.015/\text{lb} * 0.10 = \$39210.75$$

Please contact ONRR Royalty Valuation at royaltyvaluation@onrr.gov if you have any questions on how to do these calculations.

4.2 If you use the Geothermal Resource for your own Direct- Use purpose

The new regulations established a fee schedule, in lieu of royalties, for all new and converted geothermal leases that do not sell the geothermal resource and use it for a purpose other than commercial generation of electricity (direct use).

For geothermal resources produced from Class 2 and Class 3 leases, multiply the appropriate fee from the fee schedule by the number of gallons or pounds you produce from the direct use lease each month. Use the following fee schedule to calculate the fees due:

4.2.1 Direct Use Fee Schedule

Hot Water

If your average monthly inlet temperature (°F) is		Your fees are...	
At least...	But less than...	(\$/million gallons)	(\$/million pounds)
130	140	2.524	0.307
140	150	7.549	0.921
150	160	12.543	1.536
160	170	17.503	2.150
170	180	22.426	2.764
180	190	27.310	3.379
190	200	32.153	3.993
200	210	36.955	4.607
210	220	41.710	5.221
220	230	46.417	5.836
230	240	51.075	6.450
240	250	55.682	7.064
250	260	60.236	7.679
260	270	64.736	8.293
270	280	69.176	8.907
280	290	73.558	9.521
290	300	77.876	10.136
300	310	82.133	10.750
310	320	86.328	11.364
320	330	90.445	11.979
330	340	94.501	12.593
340	350	98.481	13.207
350	360	102.387	13.821

- i. For direct use geothermal resources with an average monthly inlet temperature of 130° F or less, you must pay only the lease rental.
- ii. ONRR, in consultation with BLM, will develop and publish a revised fee schedule in the *Federal Register*, as needed.
- iii. ONRR, in consultation with BLM, will calculate revised fees schedules using the following formulas:

For reporting on a volume basis: $R_v = \rho \times (T_{in} - T_{out}) \times P_{prbc} \times F_{rr} \times \frac{1}{e}$

For reporting on a mass basis: $R_m = (T_{in} - T_{out}) \times P_{prbc} \times F_{rr} \times \frac{1}{e}$

Where:

R_v = Royalty due as a function of produced volume in the fee schedule, expressed as dollars per million (10^6) gallons;

R_m = Royalty due as a function of produced mass in the fee schedule, expressed as dollars per million (10^6) pounds;

ρ [rho] = Water density at inlet temperature expressed as lbs per gallon;

T_{in} = Measured inlet temperature in ° F (as required by BLM under 43 CFR part 3275);

T_{out} = Established assumed outlet temperature of 130° F;

e = Boiler Efficiency Factor for coal of 70 percent;

P_{prbc} = The 3-year historical average of Powder River Basin spot coal prices, as published by the Energy Information Administration, or other recognized authoritative reference source of coal prices, in dollars (per MMBtu);

F_{rr} = The assumed Lease Royalty Rate of 10 percent.

(2) The fee that you report is subject to monitoring, review, and audit.

Example 4-2 Calculating direct use fees

This example shows how to calculate geothermal fees when you use your own geothermal resources in your own direct use facility:

Assumptions:

- The royalty rate is 10 percent. Note: The lease royalty rate is already included in the fee schedule so you do not need to use it in your fee calculation.
- The production/sales month is December 2016.
- Production: 39,255.645 million gallons of hot water with an average monthly inlet temperature (° F) of 135°.
- You multiply the appropriate fee (\$/million gallons) from the schedule below by the number of gallons you produced from the direct use lease for this month.
- 39255.645 million gal * \$2.524/million gal (from fee schedule) = \$99081.25

Product Code	Sales Type Code	Sales MO/YR	Transaction Code	Sales Volume	Royalty Value Less Allowances
45	NARM	122016	16	39255.65	99081.25

Chapter 5

Byproduct Valuation

In the EPOA 2005, for new leases, Congress changed the byproducts upon which royalties are due, to include "any mineral or minerals specified in the Mineral Leasing Act, 30 U.S.C. 181" (30 U.S.C. 1004(a)(2)). For Class 2 and Class 3 leases that converted their royalty terms, royalties are only due on coal, phosphate, sodium, potassium, oil, oil shale, gilsonite (including all vein-type solid hydrocarbons), or gas byproducts

5.1 Byproduct Royalty Rates

Lease Terms	Commodity	Royalty Rate
Class 1	All byproducts	5% (or as in lease terms)
Class 2	Commercially demineralized water	5%
Class 2 and converted Class 3	The royalty rate for byproducts derived from geothermal resource production that are minerals specified in section 1 of the Mineral Leasing Act (MLA), as amended (30 U.S.C. 181), is 5 percent, except for sodium compounds, produced between September 29, 2006 and September 29, 2011 (Pub. L. No. 109-338, §102; note to 30 U.S.C. 362) for which the royalty rate is 2 percent. No royalty is due on byproducts that are not specified in 30 U.S.C. § 181. (43 CFR 3211.19.)	

To ONRR's knowledge, there are no instances of commercially viable production of such byproducts in the past. ONRR therefore does not expect any significant production of any royalty-bearing byproducts from Class II leases or from Class III leases that converted all their terms to the new rule.

If you do produce any of the geothermal byproducts listed above, ONRR has the information needed for you to calculate those royalties.

Please contact the ONRR royalty valuation group at royaltyvaluation@onrr.gov for guidance.

Abbreviations

AL	arm's-length
BLM	Bureau of Land Management
Btu	British thermal unit
Btu/lb	Btu per pound
CFR	Code of Federal Regulations
°F	degrees Fahrenheit
f.o.b.	free on board
FR	Federal Register
ft	foot, feet
ft ³	cubic feet
ft ³ /gal	cubic feet per gallon
gal	Gallon
H ₂ S	hydrogen sulfide
kWh	kilowatthour
lb	pound
lb/ft ³	pounds per cubic foot
Mlb	thousands of pounds
MMBtu	million British thermal units
MMS	Minerals Management Service
MWh	megawatthour
NAL	non-arm's-length
O&M	operating and maintenance
ONRR	Office of Natural Resource Revenue
therm	100,000 btu
U.S.C.	United States Code
Wh	watthour

Appendix A- Class 2 & 3

Definition of Terms

Affiliate means a person who controls, is controlled by, or is under common control with another person.

Allowance means a deduction in determining value for royalty purposes.

Arm's-length contract means a contract or agreement between independent persons who are not affiliates and who have opposing economic interests regarding that contract. To be considered arm's length for any production month, a contract must satisfy this definition for that month, as well as when the contract was executed.

Audit means a review, conducted in accordance with generally accepted accounting and auditing standards, of royalty or fee payment compliance activities of lessees or other interest holders who pay royalties, fees, rents, or bonuses on Federal geothermal leases.

Byproduct (or mineral) means products or minerals (exclusive of oil, hydrocarbon gas, and helium), found in solution or in association with geothermal steam, that no person would extract and produce by themselves because they are worth less than 75 percent of the value of the geothermal steam or because extraction and production would be too difficult.

Byproduct recovery facility means a facility where byproducts are placed in marketable condition.

Byproduct transportation allowance means an allowance for the reasonable, actual costs of moving byproducts to a point of sale or delivery off the lease, unit area, or communitized area, or away from a byproduct recovery facility. The byproduct transportation allowance does not include gathering costs. You must report a byproduct transportation allowance as a separate discrete field on the Form MMS-2014.

Class I lease means:

- (1) A lease that BLM issued before August 8, 2005, for which the lessee has not converted the royalty rate terms under 43 C.F.R. 3212.25; or
- (2) A lease that BLM issued in response to an application that was pending on August 8, 2005, for which the lessee has not made an election under 43 C.F.R. 3200.8(b).

Class II lease means:

A lease that BLM issued after August 8, 2005, except for a lease issued in response to an application that was pending on August 8, 2005, for which the lessee does not make an election under 43 C.F.R. 3200.8(b).

Class III lease means:

A lease that BLM issued before August 8, 2005, for which the lessee has converted to the royalty rate or direct use fee terms under 43 CFR 3212.25.

Commercial production or generation of electricity means generation of electricity that is sold or is subject to sale, including the electricity or energy that is required to convert geothermal energy into electrical energy for sale.

Contract means any oral or written agreement, including amendments or revisions thereto, between two or more persons and enforceable by law that with due consideration creates an obligation.

Deduction means a subtraction the lessee uses to determine the value of geothermal resources produced from a Class I lease that the lessee uses to generate electricity.

Delivered electricity means the amount of electricity in kilowatt-hours delivered to the purchaser.

Direct use means the use of geothermal resources, that a lessee or its affiliate—
“(A) uses for a purpose other than the commercial generation of electricity; and
“(B) does not sell

Direct use facility means a facility that uses the heat or other energy of the geothermal resource for direct use purposes.

Electrical facility means a powerplant or other facility that uses a geothermal resource to generate electricity.

Field means the land surface vertically projected over a subsurface geothermal reservoir encompassing at least the outermost boundaries of all geothermal accumulations known to be within that reservoir. Geothermal fields are usually given names and their official boundaries are often designated by regulatory agencies in the respective States in which the fields are located.

Gathering means the efficient movement of lease production from the wellhead to the point of utilization.

Generating deduction means a deduction for the lessee's reasonable, actual costs of generating plant tailgate electricity.

Geothermal resources means:

(1) All products of geothermal processes, including indigenous steam, hot water, and hot brines;

- (2) Steam and other gases, hot water, and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations;
- (3) Heat or other associated energy found in geothermal formations; and
- (4) Any byproducts.

Gross proceeds (for royalty payment purposes) means the total monies and other consideration accruing to a geothermal lessee for the sale of electricity or geothermal resource. Gross proceeds includes, but is not limited to:

- (1) Payments to the lessee for certain services such as effluent injection, field operation and maintenance, drilling or workover of wells, or field gathering to the extent that the lessee is obligated to perform such functions at no cost to the Federal Government;
- (2) Reimbursements for production taxes and other taxes. Tax reimbursements are part of gross proceeds accruing to a lessee even though the Federal royalty interest may be exempt from taxation; and
- (3) Any monies and other consideration, including the forms of consideration identified in this paragraph, to which a lessee is contractually or legally entitled but which it does not seek to collect through reasonable efforts.

Lease means a geothermal lease issued under the authority of the GSA, unless the context indicates otherwise.

Lessee (you) means any person to whom the United States issues a geothermal lease, and any person who has been assigned an obligation to make royalty, fee, or other payments required by the lease. This includes any person who has an interest in a geothermal lease as well as an operator or payor who has no interest in the lease but who has assumed the royalty, fee, or other payment responsibility. This also includes any affiliate of the lessee that uses the geothermal resource to generate electricity, in a direct use process, or to recover byproducts, or any affiliate that sells or transports lease production.

Marketable condition means lease products that are sufficiently free from impurities and otherwise in a condition that they will be accepted by a purchaser under a sales contract typical for the disposition from the field or area of such lease products.

Person means any individual, firm, corporation, association, partnership, consortium, or joint venture (when established as a separate entity).

Plant parasitic electricity means electricity used to run a powerplant.

Plant tailgate electricity means the amount of electricity in kilowatt-hours generated by a powerplant exclusive of plant parasitic electricity, but inclusive of any electricity generated by the powerplant and returned to the lease for lease operations. Plant tailgate electricity should be measured at, or calculated for, the high voltage side of the transformer in the plant switchyard.

Point of utilization means the powerplant or direct use facility in which the geothermal resource is utilized.

Public purpose means a program carried out by a State, tribal, or local government for the purpose of providing facilities or services for the benefit of the public in connection with, but not limited to, public health, safety or welfare, other than the commercial generation of electricity. Use of lands or facilities for habitation, cultivation, trade or manufacturing is permissible only when necessary for and integral to (i.e., an essential part of) the public purpose.

Public safety or welfare means a program carried out or promoted by a public agency for public purposes involving, directly or indirectly, protection, safety, and law enforcement activities, and the criminal justice system of a given political area.

Secretary means the Secretary of the Department of the Interior or any person duly authorized to exercise the powers vested in that office.

Wheeling means the transmission of electricity from a powerplant to the point of delivery.

Appendix B- Important Addresses

Email requests for valuation guidance to royaltyvaluation@onrr.gov.

Links to ONRR geothermal regulations, handbooks, forms, and other important information at www.onrr.gov.