GUIDE TO FINANCING
SMALL-SCALE GEOTHERMAL ENERGY PROJECTS

MASTER

April, 1982

PREPARED BY ELIOT ALLEN & ASSOCIATES INC.
FOR THE OREGON DEPARTMENT OF ENERGY
IN CONJUNCTION WITH THE WASHINGTON STATE ENERGY OFFICE
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1. INTRODUCTION

As awareness of geothermal energy increases and cost-effective opportunities for using it expand, there is an increasing need for financing tailored to small-scale development projects. This Guide has been written to assist persons and businesses who are interested in obtaining financing for such projects. Its purpose is to provide a brief overview of the current financing sources for such projects, and the major considerations commonly encountered in assembling financing. This process can be as simple as borrowing against the equity in a home for its retrofitting, or as complicated as a limited partnership formation to finance an industrial project. Thus potential geothermal developers should obtain thorough advise from professional financiers regarding specific projects and transactions.

For purposes of the Guide, small-scale geothermal projects are defined as those generally requiring $1 million or less in capital investment (including well drilling and completion; pumping and distribution equipment; and end-use conversion equipment).

The Guide, as shown in Figure 1, is organized to follow the general sequence of defining a project, identifying financial sources, preparing a business plan, and assembling financing.
Project Definition

A first step in financial planning is the definition or description of the project, which affects its eligibility and suitability for different types of financing. Small-scale geothermal projects can be grouped according to the type of end-use proposed, and by the type of individual or organization developing the project, as follows:
### End-Uses

<table>
<thead>
<tr>
<th>General Resource Temperature Ranges °F (°C)</th>
<th>Conversion Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-95 (16-35)</td>
<td>Groundwater heat pump</td>
</tr>
<tr>
<td>80-210 (27-99)</td>
<td>Direct heat exchange and heat pump</td>
</tr>
<tr>
<td>200-350 + (93-177 +)</td>
<td>Wellhead electric generation</td>
</tr>
</tbody>
</table>

### Developers

<table>
<thead>
<tr>
<th>Developer/Investor</th>
<th>Potential Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual home owner</td>
<td>Residential space and water heating</td>
</tr>
<tr>
<td>Small business</td>
<td>Space, water, and process heating</td>
</tr>
<tr>
<td>Local government, utility, resource company</td>
<td>District heating</td>
</tr>
<tr>
<td>Farm/ranch</td>
<td>Space and water heating, (home, greenhouse, aquaculture, feedlot, dehydration)</td>
</tr>
<tr>
<td>All of the above</td>
<td>Wellhead electric generation</td>
</tr>
</tbody>
</table>

## 2. POTENTIAL SOURCES OF FINANCING

### Public Sources

Public financial assistance for resource exploration and project construction has been dramatically reduced over the past year, and it is expected that this trend will continue in the near future. Thus, the sources listed below presently have authority but not necessarily current appropriations for supporting geothermal development; each agency should be contacted directly for detailed information on the status of their programs:
FEDERAL

Bonneville Power Administration
BPA has supported resource assessment on a limited basis since 1979. It is presently implementing new programs under the Regional Power Act which may have applicability to exploration work, e.g. technical assistance to local governments for developing direct-application renewable resources, and research and development of renewable power systems. In addition, BPA is also initiating programs to provide billing credits and other forms of financial assistance for conservation resulting from a geothermal power or direct application project. The specifics of these programs are presently being finalized, and BPA should be contacted for more details.

U.S. Department of Housing & Urban Development
HUD's Community Development Block Grant (CDBG) and Urban Development Action Grant (UDAG) funds are available to local governments and private developers on a grant and loan basis, respectively. CDBG funds are disbursed to local governments on an annual statewide competitive basis. UDAG loans are available for public-private joint ventures, where a maximum of 25% of capital costs can be provided at negotiable rates (1-16%) and terms (10-30 years).

Farmers Home Administration
FmHA can provide: farm ownership and operating loans; business and industrial loans; loan guarantees; and community facility (local government) grants and loans.

Small Business Administration
The SBA can provide loan guarantees (up to 90% of a $500,000 conventional loan), generally at prevailing interest rates. On low-risk projects, up to $50,000 can be loaned directly, generally at rates lower than conventional sources.

OREGON

Veterans’ Loans
Oregon veterans are eligible to receive an additional $3,000 above the normal residence or farm loan ceiling, for purpose of installing a geothermal system.

ODOE Small-Scale Energy Program
SELP provides low interest loans, e.g. 10-12%, for individuals, small businesses (less than 100 employees), and local governments. The terms of the loan may range to a maximum of 20 years. The amount of the loan will be limited by the value of its security, e.g. residence or business, where the maximum loan would be 90% of the security value for first mortgage loans, or 85% for second mortgage loans. Industrial projects may receive up to a maximum of 80% for first mortgages and 70% for second mortgages. The actual loan may be less than these limits due to other financial constraints. The application process is made through the SELP section of the Oregon Department of Energy.

ODED Industrial Development Revenue Bonds
This IDRB program provides new or expanding businesses with low interest loans, e.g. 10-12%, financed through tax-exempt bond sales. Project facilities are leased back to a company during the life of the bonds. The state retains title to the project’s real property and equipment, and the lessee’s payments cover bond retirement servicing. Generally, a $500,000 project is the minimum amount feasible for processing a bond issue.

WASHINGTON

Department of Commerce & Economic Development IDRB Program
Similar to Oregon’s industrial development revenue bond program described above.

LOCAL GOVERNMENTS

Oregon and Washington
In both states local governments can finance construction work through tax-exempt bonds (general obligation, revenue, local improvement district); special short-term tax levies; grants and guaranteed loans; lease purchasing; and joint venturing with other governmental units or private developers.
Private Sources

The potential sources of private sector financing for exploration and project construction include the following:

**Personal Finance Companies**
For homeowner or farm projects these organizations can provide flexible financing in amounts up to $20-30,000, depending upon a person's credit rating and assets. Interest rates are generally higher than those of commercial banks.

**Commercial Finance Companies**
These counterparts to personal finance companies serve the same function for small and new businesses, limited again, however, by relatively low loan ceilings and high interest rates.

**Equity Investors and Investment Brokers**
Equity investors provide capital, via a loan or stock purchase, in exchange for start-up tax benefits, short-term payback, and a rate of return commensurate with the project's risks, e.g. 25% or greater. These investors are typically contacted through investment bankers or brokers, who assemble financing packages, e.g. limited partnership, in exchange for a management fee.

**Venture Capitalists**
These firms specialize in providing start-up or expansion capital for high risk ventures. The following table provides an overview of venture capital sources and typical terms.

**Commercial and Savings Banks**
These institutions make personal and business loans of varying length and interest rates, depending upon money market conditions. Savings banks are considered to be slightly more liberal than commercial banks in lending terms.

**Savings and Loan Associations**
These institutions specialize in real estate loans secured by land and buildings. Their loans are generally made for longer terms, and with higher interest rates than the foregoing institutions.

**Insurance Companies**
These organizations make mortgage and business loans, ranging from 10-25 years, at fixed rates which are usually higher than conventional mortgage rates. These companies can be approached through investment bankers and brokers. Also, some trusts and pension funds make similar loans through the same investment houses.

**Small Business Investment Companies**
An SBIC is a privately-owned investment company licensed by the SBA to provide equity capital and long-term loans to small firms. SBIC's finance through straight loans and equity-type investments. Generally financing is for 5 years or longer, in amounts up to several million dollars.

**Leasing Companies**
Rather than own the project facilities which are being constructed, a developer may be able to lease them from a leasing company. This structure provides the lessee with the tax benefits of ownership, and the lessee with the benefit of low equity start-up and deductible lease payments. However, interest costs are usually higher for these arrangements, and the lessee, unless arranged otherwise, does not retain the residual value of the facilities at the end of the lease.

**Utilities**
Although these organizations have conservative financial traditions, they are increasingly interested in identifying higher risk renewable resources to meet future power needs. As such, they may be suitable partners for a joint-ventured exploration program, or willing to perform exploration in exchange for the production output from a successful project.

**Oil and Gas Companies**
These organizations are already in the business of exploring for oil and gas, in a manner similar to geothermal exploration. Thus, they have proven expertise and established access to exploration financing, usually in exchange for wellhead production rights.
As shown in Table 1 below, there is a variety of financing available through three general types of venture capital sources.

<table>
<thead>
<tr>
<th></th>
<th>Private venture capital firms</th>
<th>Small business investment companies</th>
<th>Corporate-industrial venture capitalists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Estimated number – 1981</strong></td>
<td>200-250</td>
<td>305+</td>
<td>Perhaps 50 in business</td>
</tr>
<tr>
<td><strong>Principal objectives and motives</strong></td>
<td>Capital gains 25%-40% compounded after tax per year, five to ten times original investment in five to ten years; potential for public stock offering downstream</td>
<td>Similar to private firms</td>
<td>Acquire windows on technology; tap new talent; acquire new markets; spawn new suppliers; and for diversification, public relations, use of surplus cash, philanthropy, and capital gains</td>
</tr>
<tr>
<td><strong>Typical size and range of average investment</strong></td>
<td>$300,000 to $4 million; survey average: $813,000</td>
<td>Similar to private firms</td>
<td>$10-$15 million not unusual</td>
</tr>
<tr>
<td><strong>State of ventures sought</strong></td>
<td>All stages; 25%-35% start-ups more common</td>
<td>Similar to private firms</td>
<td>Later stages; rarely start-ups; seeking $100-$200+ million</td>
</tr>
<tr>
<td><strong>Must business ask approval of its decisions from venture capitalist?</strong></td>
<td>Unusual, required by perhaps 10%-12% of firms</td>
<td>Similar to private firms</td>
<td>Very common, 75% of decisions; review boards and directors</td>
</tr>
</tbody>
</table>

SOURCE: Timmons & Gumpert, 1982

**Tax Incentives**

An important financial consideration in any project is the availability and economic affect of tax incentives. The federal and state incentives applicable to geothermal development are summarized as follows:
FEDERAL (Applies only to resources above 122°F or 50°C)

Intangible Drilling Costs
The cost of drilling and completing a geothermal well are divided, for tax purposes, into two categories: intangible drilling costs (IDC) and equipment costs. Equipment costs are capitalized and recovered through depreciation. IDC's may either be deducted as expenses in the year in which they are incurred, giving the taxpayer a special accelerated depreciation, or capitalized and recovered through depreciation. Costs incurred in drilling a nonproductive or unsuccessful well are deducted as an ordinary loss.

Depletion Allowance
Geothermal producers are entitled to deduct a percentage of annual gross income from geothermal sales as a resource depletion allowance. This percentage is presently 18%, declining to 15% in 1984, where it will remain thereafter. Unlike depreciation, the depletion allowance continues to be available each year, even after the original investment in the resource has been recovered.

Tax Credits
A taxpayer can claim a credit of 40% of the first 10,000 invested in a residence geothermal well, or a 25% credit for a business project. These credits apply
only to specially defined equipment and other tangible property which is part of a geothermal system. In addition, pollution control equipment which may be required for disposal of geothermal fluids is eligible for an additional 10% special investment credit. However, none of these credits are available for project facilities which are defined as "public utility property" by the Internal Revenue Service, i.e. used in businesses whose rates are publicly regulated.

Accelerated Cost Recovery

This new method of computing depreciation allows taxpayers to recover costs in as little as five years for certain types of equipment.

OREGON (No resource temperature minimum)

Tax Credits

Where no election to deduct IDC's has been taken, in Oregon tangible residential well costs are eligible for a 25% credit up to $1,000 per dwelling; and businesses can similarly qualify for a 35% credit, which must be claimed over a five-year period. These credits also apply to equipment and other tangible property which is part of a geothermal system.
3. FINANCIAL PLANNING

For purposes of financial planning, a small-scale geothermal project can be divided into the phases shown in Figure 2. Although not all projects will proceed exactly according to the sequence shown, these steps represent common phases in planning a project and documenting its viability to potential lenders or investors.
For most developers the project outline shown in Table 2 is a key device for assembling all information relevant to the project. This approach demonstrates the technical and economic viability of the project, the management team's capability to carry it out, and the supporting financial data.

### Table 2

#### BUSINESS PLAN OUTLINE

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Summary of business plan and strategy</th>
<th>Products or services</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company and its industry</td>
<td>The company strategy</td>
<td>Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proprietary position</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technologies and skills</td>
</tr>
<tr>
<td>Market research and evaluation</td>
<td>Customers</td>
<td>Market size, trends, and segments</td>
</tr>
<tr>
<td></td>
<td>Competition – strengths and weaknesses</td>
<td>Estimated market share and sales</td>
</tr>
<tr>
<td></td>
<td>Economics – margins, costs</td>
<td>Ongoing market evaluation</td>
</tr>
<tr>
<td>Marketing plan</td>
<td>Overall marketing strategy</td>
<td>Pricing</td>
</tr>
<tr>
<td></td>
<td>Sales tactics and distribution</td>
<td>Service and warranty policies</td>
</tr>
<tr>
<td></td>
<td>Advertising and promotion</td>
<td>Profitability and break-even analysis</td>
</tr>
<tr>
<td>Design and development plans</td>
<td>Development status and tasks</td>
<td>Difficulties and risks</td>
</tr>
<tr>
<td></td>
<td>Product improvement and new products</td>
<td>Costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing and operations plan</td>
<td>Geographical location</td>
<td>Facilities and improvements</td>
</tr>
<tr>
<td></td>
<td>Strategy and plans</td>
<td>Labor force</td>
</tr>
<tr>
<td>Management team</td>
<td>Organization – roles and responsibilities</td>
<td>Key management personnel</td>
</tr>
<tr>
<td></td>
<td>Board of directors</td>
<td>Management compensation and ownership</td>
</tr>
<tr>
<td></td>
<td>Management assistant or training needs</td>
<td>Supporting outside professional services</td>
</tr>
<tr>
<td>Overall schedule (monthly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Important risks, assumptions, and problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community impact</td>
<td>Economic development</td>
<td>Human development</td>
</tr>
<tr>
<td></td>
<td>Community development</td>
<td>Environmental</td>
</tr>
<tr>
<td>Financial plan (monthly for first year; quarterly for next two to three years)</td>
<td>Profit and loss forecast</td>
<td>Pro forma cash flow analysis</td>
</tr>
<tr>
<td></td>
<td>Pro forma balance sheet</td>
<td>Break-even charts</td>
</tr>
<tr>
<td>Proposed company offering</td>
<td>Desired financing</td>
<td>Securities offering</td>
</tr>
<tr>
<td></td>
<td>Capitalization</td>
<td>Use of funds</td>
</tr>
</tbody>
</table>

SOURCE: Timmons et al., 1977
As shown in Table 2, prospective investors and lenders will require detailed discussions of the major technical, economic, and management factors which significantly affect a project's chances of success. These topics and their relationship to financial development are summarized as follows:

**Technical Feasibilities**

- The geothermal resource should be evaluated and documented as completely as possible (without incurring major expenses). Information should be compiled to describe and/or estimate its physical properties; historic and predicted performance; expected operating conditions; and clear legal ownership and/or resource rights.

- The geothermal end-use system, e.g. groundwater heat pump, direct-use, or wellhead electric generator, should also be fully described according to performance histories and expectations, technical risks, and contingency plans.

- The management's experience and expertise in carrying out business operations should be fully documented.

- From a financial investment standpoint, projects which are technically simpler are usually considered lower risks, which should be considered when designing the geothermal system. Project facilities which either
maintain a conventional back-up system or can be reconverted easily back to conventional fuels, may also find financing more available and affordable.

Economic Feasibilities

- A detailed project budget must be developed to describe all capital, operating, and maintenance costs; a simplified example is shown in Table 3.

- The business structure of the project should be chosen in part to provide the most favorable access to financial sources, and, if it is a taxable project, to provide the developer with the most favorable tax position. Public projects can include one or more units of government or a nonprofit corporation; and private ventures can be organized as proprietorships, partnerships, or corporations.

- Once the business structure is determined (taxable or nontaxable), life-cycle costs must be calculated for the project to describe expected cash flows and return on investment. A simplified example of such life-cycle costing is shown in Table 4.
### Table 3

**SAMPLE SMALL-SCALE PROJECT BUDGET**

#### CAPITAL COSTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production/injection wells:</td>
<td>$50,000</td>
</tr>
<tr>
<td>Pipelines:</td>
<td>$4,000</td>
</tr>
<tr>
<td>Wellhead pump:</td>
<td>$19,000</td>
</tr>
<tr>
<td>Heat exchanger:</td>
<td>$5,000</td>
</tr>
<tr>
<td>Controls:</td>
<td>$8,000</td>
</tr>
<tr>
<td>Non-capital items (organization costs, geological and engineering fees, legal):</td>
<td>$14,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$100,000</strong></td>
</tr>
</tbody>
</table>

#### ANNUAL OPERATING & MAINTENANCE COSTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump maintenance:</td>
<td>$1,000</td>
</tr>
<tr>
<td>Pumping electricity:</td>
<td>$3,000</td>
</tr>
<tr>
<td>Exchanger &amp; control maintenance:</td>
<td>$500</td>
</tr>
<tr>
<td>Insurance &amp; taxes:</td>
<td>$500</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$5,000</strong></td>
</tr>
</tbody>
</table>

1. Depending on site conditions and end-use, these costs may also include back-up or peaking equipment; circulation pumps; and electrical interconnection equipment.

2. May also include, if applicable, reservoir monitoring expenses; peaking fuel; administrative and marketing overhead; resource royalty; and reserve funds.
Table 4

SAMPLE LIFE-CYCLE COST ANALYSIS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SALES</th>
<th>OPERATION &amp; DEPRECIATION</th>
<th>GEOTHERMAL ENERGY</th>
<th>NET INCOME</th>
<th>TAXABLE</th>
<th>FEDERAL NET INCOME</th>
<th>AFTER DEPRECIATION TAXES</th>
<th>AFTER DEPRECIATION DEPLETION</th>
<th>NET INCOME ADD</th>
<th>AFTER TAX</th>
<th>DISCOUNTED CASH FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>25000</td>
<td>5000</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
<td>5000</td>
<td>3500</td>
<td>1500</td>
<td>40000</td>
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<td>35648</td>
</tr>
<tr>
<td>1983</td>
<td>25000</td>
<td>5000</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
<td>5000</td>
<td>3500</td>
<td>1500</td>
<td>15000</td>
<td>16500</td>
<td>12175</td>
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<td>1984</td>
<td>25000</td>
<td>5000</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
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<td>3500</td>
<td>1500</td>
<td>15000</td>
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<td>10458</td>
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<td>1985</td>
<td>25000</td>
<td>5000</td>
<td>10000</td>
<td>10000</td>
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<td>16500</td>
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<td>5000</td>
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<td>3500</td>
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<td>15000</td>
<td>16500</td>
<td>7716</td>
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<tr>
<td>1987</td>
<td>25000</td>
<td>5000</td>
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<td>3500</td>
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<td>15000</td>
<td>16500</td>
<td>6628</td>
</tr>
<tr>
<td>1988</td>
<td>25000</td>
<td>5000</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
<td>5000</td>
<td>3500</td>
<td>1500</td>
<td>15000</td>
<td>16500</td>
<td>5693</td>
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<tr>
<td>1989</td>
<td>25000</td>
<td>5000</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
<td>5000</td>
<td>3500</td>
<td>1500</td>
<td>15000</td>
<td>16500</td>
<td>4890</td>
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<td>1990</td>
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<td>5000</td>
<td>10000</td>
<td>10000</td>
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<td>5000</td>
<td>3500</td>
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<td>16500</td>
<td>4201</td>
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<td>1991</td>
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<td>10000</td>
<td>5000</td>
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<td>3500</td>
<td>1500</td>
<td>15000</td>
<td>16500</td>
<td>3608</td>
</tr>
<tr>
<td>TOTAL</td>
<td>250000</td>
<td>50000</td>
<td>100000</td>
<td>100000</td>
<td>50000</td>
<td>50000</td>
<td>35000</td>
<td>15000</td>
<td>175000</td>
<td>190000</td>
<td>100000</td>
</tr>
</tbody>
</table>

INVESTMENT TAX CREDIT 25%
RETURN ON INVESTMENT 16.417%
TOTAL CAPITAL COST 100000
NET PRESENT VALUE 100000

Source: Higbee, 1981
All projects will require contingency planning to accommodate performance downturns and profitability delays. Management should identify sensitive variables and potential problem areas, and develop specific responses for assuring lenders/investors that project disruptions will be minimized. One form of protection is insurance, which can be issued to geothermal projects for: reservoir production, mechanical performance, and geothermal pricing competitiveness against other fuels (price support insurance).

The overall economic outlook for a business will also play a major role in financing a geothermal system which is dependent upon larger market conditions. Positive historical and predicted industry characteristics will be necessary to convince lenders/investors of a project's favorable long-term prospects.

Regulatory Considerations

- Developers must determine their regulatory obligations and demonstrate to lenders/investors that all necessary legal and environmental requirements and clearances are in order. Documentation should be compiled for: resource ownership and/or allocation (title report, water right); resource disposal; and, if applicable, public utility operations.
Project Guarantees

- Project financing may be more readily obtained if guarantees are added in the form of: insurance, as described above; a long-term contract for, or access to, reliable geothermal resources; long-term customer contracts for purchasing geothermal heat in an amount sufficient to cover debt service; or a pledge of other revenues for debt service shortfalls.

4. DIRECTORY OF TECHNICAL & FINANCIAL ASSISTANCE

Technical Assistance

The following agencies and organizations provide various forms of technical assistance which may be applicable to geothermal development:

Regional/National

Bonneville Power Administration
Electric projects: Office of Engineering & Construction
Non-electric projects: Division of Conservation
P.O. Box 3621
Portland, OR 97208
503/230-3000

Oregon Institute of Technology
Geo-Heat Center (engineering and economic assistance)
Oretech Branch
Klamath Falls, OR 97601
503/882-6321
Geothermal Resources Council (a professional & educational trade association)
P.O. Box 98
Davis, CA 95616
916/758-2360

Electric Power Research Institute (industry-sponsored research and development)
P.O. Box 10412
Palo Alto, CA 94303
415/855-2000

Oregon

Department of Energy
Geothermal Program
Labor & Industries Bldg.
Salem, OR 97310
503/378-2778

Department of Geology & Mineral Industries
Geothermal Program
1005 State Office Bldg.
Portland, OR 97201
503/229-5580

Water Resources Department
Well and Dam Safety Division
555 13th Street, NE
Salem, OR 97310
503/378-8455

Washington

State Energy Office
Geothermal Program
400 East Union
Olympia, WA 98504
206/754-0774

Department of Natural Resources
Division of Geology & Earth Resources
Olympia, WA 98504
206/753-6183
Public Financing

Contacts for public financing programs are as follows:

Federal

Bonneville Power Administration
Power: Office of Engineering & Construction
Direct-Use: Division of Conservation
P.O. Box 3621
Portland, OR 97208
503/230-3000

Department of Housing & Urban Development
Community Planning & Development Division
520 S.W. 6th
Portland, OR
503/221-2601

Farmers Home Administration
120 SW 3rd
Portland, OR
503/221-2731

Small Business Administration
120 SW 3rd
Portland, OR
503/221-2682

Oregon

Department of Energy Small-Scale Loan Program
Labor & Industries Bldg.
Salem, OR 97310
503/378-1033

Department of Economic Development Industrial Revenue Bond Program
155 Cottage Street, NE
Salem, OR 97310
503/373-1234
Private Financing

Sources of private financing can be contacted through the following organizations and associations:

Banking

Independent Bankers Association of America
P.O. Box 267
Sauk Centre, MN 56378
612/352-6546

Mortgage Bankers Association of America
1125 15th, NW
Washington, D.C. 20005
202/861-6500

Oregon Bankers Association
720 12th Street, SE
Salem, OR 97302
503/581-3522
Washington Bankers Association  
2001 6th Avenue  
Seattle, WA  
206/624-5910

Investment Brokerages

Association of Investment Brokers  
44 Beaver Street, Suite 405  
New York, NY 10004  
212/269-6428

Investment Company Institute  
1775 K Street, NW  
Washington, D.C. 20006  
202/293-7700

National Association of Securities Dealers  
1735 K Street, NW  
Washington, D.C. 20006  
202/833-7200

Securities Industry Association  
20 Broad  
New York, NY 10005  
212/425-2700

Small Business Investment Companies (SBA Licensed)  
For Oregon & Washington

Capital Resource Corporation  
1001 Logan Building  
500 Union Street  
Seattle, WA 98101  
206/623-6550

Cascade Capital Corporation  
1300 SW 5th Street, Suite 3018  
Portland, OR 97201  
503/223-6622
First Farwest Capital Fund, Inc.
400 SW Sixth Avenue, 2nd Floor
P.O. Box 4162
Portland, OR 97208
503/224-7740

Northern Pacific Capital Corp.
261 SW 3rd Avenue, Suite 315
P.O. Box 1530
Portland, OR 97207
503/225-4600

Northwest Business Investment Corp.
929 West Sprague Avenue
Spokane, WA 99204
509/838-3111

Peoples Small Business Investment Corp.
1414 Fourth Avenue
Seattle, WA 98171
206/344-3773

Seafirst Capital Corporation
4th & Blanchard Bldg., 6th Floor
Seattle, WA 98121
206/583-7096

Trans-AM Bancorp, Inc.
3211 NE 78th Street
Vancouver, WA 98665
206/574-4749

Washington Capital Corporation
1417 Fourth Avenue
P.O. Box 1770
Seattle, WA 98111
206/682-5400

Washington Trust Equity Corp.
P.O. Box 2127
Spokane, WA 99210
509/455-4106

Venture Capital Companies

National Venture Capital Association
1225 19th Street, NW, Suite 750
Washington, D.C. 20036
202/659-5756
5. GLOSSARY OF GEOTHERMAL/FINANCIAL TERMS

AMORTIZATION: The reduction of a debt by means of periodic payments sufficient to meet current interest and extinguish the debt at maturity.

BALANCE SHEET: A list of the measurable assets owned or controlled by a business on a specific date equal to the liabilities and equities listed for the business at that time.

BALLOON PAYMENT: Where a loan is amortized in equal periodic installments, except for a final payment which is substantially larger than the other payments, the final payment is known as a balloon payment.
CAPITAL COSTS: Which refer to assets with a useful life of more than one year, are cash outflows in the year or years that they are incurred. Capital costs are expensed through depreciation, depletion, or amortization charges over the useful life of the assets. To the extent that these charges offset income taxes, they become cash inflows.

CAPITAL STRUCTURE: The combination of debt and equity that make up a project's total funding.

CASH FLOW: Cash receipts and disbursals over a certain period of time.

CONSTANT DOLLARS: Dollars of constant value to a reference year. Real dollars, real costs, and deflated dollars are synonymous terms.

DEPRECIATION: The expensing of capital assets which have a limited useful life. Since the capital costs have already been incurred, depreciation is a partial recovery of the capital costs through the reduction of income taxes. Depreciation thus leads to a cash inflow. The basis for depreciation is usually the useful life of the asset, but the shortest period allowed by the tax regulations is usually preferred by the taxpayer.

DISCOUNTED CASH FLOWS: A cash flow occurring some time in the future which has been discounted by a given discount factor on a compounded basis, resulting in the present value of this future cash flow.

ECONOMIC (OR USEFUL) LIFE OF PROPERTY: The estimated period during which the property is expected to be economically usable, with normal repairs and maintenance, for the purpose for which it was intended.

FIXED COSTS: Those yearly costs, such as insurance, taxes, interest, and administrative overheads which do not vary with the level of output.

FIXED RATE: An interest rate which is fixed during the term of the financing.

FLOATING RATE: An interest rate which is adjusted upward or downward during the term of a loan as short-term rates move upward or downward.

FULL PAYOUT LEASE: A lease in which the cash flows will return to the lessor the full cost of the asset, the cost of financing and administering the asset, plus a satisfactory return.

FUTURE VALUE: The value in a future period of a single payment today or of a stream of payments over a period of years. It is identical to present worth except that the reference period is in the future.
GUARANTY: A contract making a party responsible for repayment of a debt to a lender, or for some other performance.

INCREMENTAL COSTS: These are the costs of continuing a project over and above the sunk costs; or the additional costs (or savings) of an alternative project when compared to a reference project.

INFLATED DOLLARS: The monetary values which are affected by inflation. Current dollars and current costs are synonymous terms. Inflated dollars are related to constant dollars by the rate of inflation.

INSTITUTIONAL INVESTORS: Investors such as banks, insurance companies, trusts, pension funds, foundations, and educational, charitable, and religious institutions.

INTERNAL RATE OF RETURN: That discount rate which equates investment costs with net revenues. It usually refers to the earnings rate on equity capital. At the internal rate of return, the net present value is zero. Internal rate of return is frequently used by industry as the measure of the worth of a capital investment and thus serves as a basis for ranking alternative investments.

INVESTMENT TAX CREDIT (ITC): The income tax credit available when a company purchases capital equipment. An additional energy investment credit applies to capital equipment which transmits or uses geothermal or other alternate energy.

LEVERAGED LEASE: A tax lease in which the equity investor (owner) provides a percentage of the equipment cost and borrows the balance from institutional investors, on a non-recourse basis. As owner, he receives 100% of the cash flow from depreciation and the investment tax credit.

NET PRESENT VALUE: The present worth of a discounted cash flow.

PRESENT WORTH: The value in the current year of a cash flow stream. Sometimes present worth refers to the first year of the project life, or the first year when revenues are generated.

PROFIT AND LOSS STATEMENT: An accounting statement summarizing the income for a particular period, including revenues and expenses.

PROJECT FINANCING: The financing of an economic unit which is capable of generating sufficient cash flow to conservatively cover operating costs and debt service over a reasonable time period which is less than the economic life of the asset.

PURCHASE OPTION: The option to purchase the equipment at the expiration of a contract or lease.
REVENUE TAXES: In various forms, these are assessed by governments as a percentage to sales revenues.

ROYALTIES: Payments to the owners of property. They are usually expressed as a percentage of production or revenues resulting from sales. As such, their treatment is similar to a severance tax.

SALE AND LEASEBACK: A method by which a company can convert fixed assets to cash by selling an asset to a lessor who, in turn, leases it back to that company.

SALVAGE VALUE: The value received from a capital asset after the asset is removed from service.

SEVERANCE TAXES: Assessed by some governments on the value or quantity of natural resource production. In this manner, their treatment corresponds to that for a revenue tax.

SUBORDINATION OF DEBT: An agreement that requires a borrower to repay a certain lender before other lenders.

VARIABLE COSTS: Vary with the level of production and commonly include the labor and materials which enter the final product.

WORKING CAPITAL: Money which is used for the business's immediate operations. Working capital is computed by subtracting current liabilities from current assets.


6. REFERENCES/BIBLIOGRAPHY

Geothermal Economics and Financing


General Financing & Project Analysis


Oregon Geothermal Resources


Washington Geothermal Resources


