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BUSBAR CONTRACTS FOR GEOTHERMAL

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One relatively simple and convenient method for a utility to obtain geothermal electric power is to buy it as busbar power. In this situation, the utility contracts with a developer/supplier of geothermal power who has taken all of the risks of developing and producing the power and then simply sells it as busbar power. In this case, the utility can be relieved of the responsibilities of operating in areas in which it may not be familiar and of making capital outlays in the areas of high risk. The interaction with state and federal regulatory agencies relative to the cost of the resource and its utilization may also be simplified. Generally, the contract is based on a take-or-pay basis, contingent upon a reasonable geothermal energy source being found and developed.

Several organizations are taking this generic approach to marketing a geothermal project. One such company is Diablo Exploration of Oakland, California. It has approached many of the western utilities and is actively working with some. A commitment by Public Service Company of New Mexico is the basis for an application under the federal geothermal loan guarantee program.

In a typical contract for this type of project there are specific responsibilities for the resource/power vendor. These usually include:

- Find resource and drill wells
- Test resource
- Get lease or ownership of property
- Do design and engineering of production field and power plant
- Get permits and regulatory approval
- Arrange financing for plant
- Obtain construction contractor and build plant
- Start up production field and electric generation plant
- Test run electric plant
- Make electric power available at plant boundary

The utility company also has some responsibilities. These usually include:

- Obtain necessary regulatory approval for contract

- Provide interconnection and step-up transformers to accept power; operate and maintain this facility
- Work closely with the vendor on design, construction, and operation of the plant
- Buy plant electric output

This type of contractual arrangement has many advantages and disadvantages both to the vendor and to the utilities. The following is a list of some of the advantages to the utility:

- Interface with only one vendor or contractor
- Minimum risk if no resource is available
- Minimum capital risk
- No obligation on field or plant development or construction cost
- Minimum plant size (i.e., 50 MW)
- Site compatibility (i.e., service territory vs. long transmission lines)
- Fixed price plus fixed or controlled escalators
- Regulatory roll-in of price; off balance sheet handling of cost
- Predictable cost increases for plant and field operation and maintenance. An agreeable economic indicator can be used. Changes in ad valorem and income taxes are more difficult to predict.
- Long-term contracts (i.e., 30 years, then year to year renewal)
- Right of refusal on lease or purchase of power plant after five years
- Right of first refusal on additional capacity from expanded resource base

Some of the possible disadvantages to a utility are as follows:

- Higher total electric power costs, due to the lack of utility financing and the higher return necessary for risk capital
- Lack of control of fuel costs
- Lack of control of operating and maintenance costs
- Requirement to use output on take-or-pay basis for 30-year contract. Load may shift or cost may become noncompetitive.
- Limited lead time on acceptance of electricity (i.e., 36 months to build substation and transmission lines)

- Limited use of specific technology (i.e., inability to build utility's own plant using some technology incorporated in vendor-built plant)
- No termination liability protection (though could be factored into contract)
- No guarantee of available electric output from plant (a penalty factor could be incorporated into the contract, however)
- No overall control of plant with total system interaction (i.e., cycling, voltage control, power sales to other utilities, etc.)
- Limited opportunity to obtain complete control of resource or power plant

The power purchase contract does have some advantage to specific utility companies. When they lack staff or expertise to be able to explore, develop, and build geothermal plants, the contractor or vendor may supply this need efficiently. It is possible that utilities may be experiencing difficulty in arranging large capital outlays. This approach can significantly reduce their capital requirements. In any case, it allows the utility company to get into the business of using geothermal energy when it may not be able to do so under the normal business constraints of fuel supply and power plant construction.