



**Renewable
Energy Systems**

US Geothermal – San Emidio Repower Project

TAS ENERGY GEOTHERMAL-TO-POWER (G2P) UNIT AT SAN EMIDIO

NEVADA

Project Overview

The San Emidio plant is located about 100 miles NNE of Reno, Nevada, just south of Empire, west off route NV447. The site was formerly known as Empire Geothermal Plant prior to US Geothermal's acquisition in May 2008. The plant is located in high desert and is on the edge of a dried up lake bed with no close neighbors.

The project is to repower the existing plant, currently producing at best 3.5MW, to provide 8.6MW net power from the same geothermal resource flow. The existing plant was installed approximately 25 years ago and comprises 4 x Ormat <1MW water cooled systems. The existing 285°F geothermal resource has been proven throughout the operating life as a very stable resource. The wells will not be reworked, thus eliminating the major risk associated with geothermal development.

Since acquiring the San Emidio plant, U.S. Geothermal has invested in repairs and upgrades to the existing plant and associated well field to increase production capacity and power sales. Electrical power output has increased over 30% from the first half of 2009 and the project has been generating positive cash flow. Due to the fluid employed in the Ormat design, the plant will continue to be plagued with corrosion problems. This fact coupled with the ability to enhance and substantially increase power output with currently available best technology is US Geothermal's drive to upgrade the site.

The repower, employing TAS' advanced Geothermal-to-Power (G2P) technology, will more than double power output from the same geothermal fluid flow rate. The system will also provide an inherently corrosion resistant design due to the use of different working fluids utilized in the TAS system.

The site has potential geothermal reserves for an expansion to 45MW. US Geothermal has recently been awarded a \$3.3m grant by the Department of Energy to investigate new techniques to characterize the geothermal resource. In addition, US Geothermal has announced that they have acquired additional water rights sufficient for the full plant build-out. The transmission interconnection is suitable as-is for the increased power production of the repower. US Geothermal has budgeted to upgrade 50 miles of transmission line for the full build-out. The first phase, however, will only include the repower of the existing geothermal resource.

US Geothermal has agreed a release from the existing power purchase agreement (PPA) with Nevada Power to allow the additional power to be renegotiated under a separate PPA. While this has not been finalized, the close proximity to the Californian market and good transmission interconnect places US Geothermal in a strong negotiating position to sign up to a valuable PPA when appropriate.

Scope of the Project

The new plant is green field. The new plant will be located approximately half a mile north and adjacent to a manufacturing facility, recently purchased by US Geothermal, which was used for drying garlic. The facility will be used for the site operations buildings. The existing plant will remain operational until the new plant is commissioned. The repower project is comprised of:

- ü Purchase of the TAS power island equipment
- ü Turnkey Installation of the TAS power island and Balance of Plant
- ü Structured financing during the construction phase
- ü Moving the transmission interconnect to the new plant
- ü Reworking the existing well field piping to connect to the new plant.

The lead time of the project is 18months from order award to COD / power production.



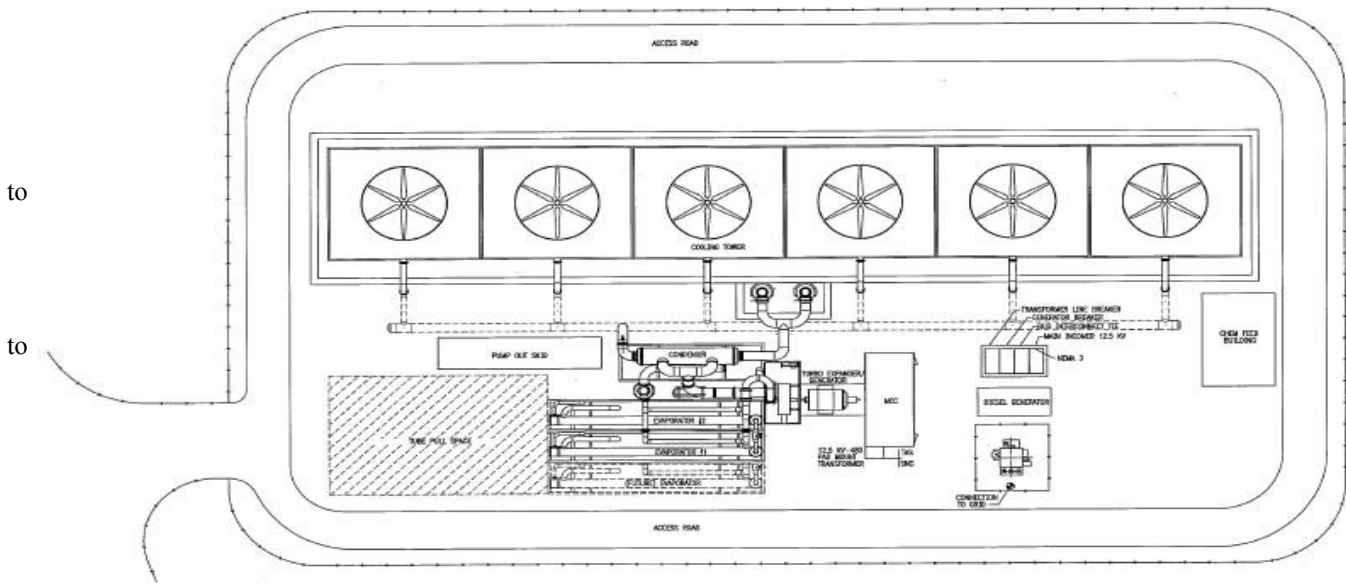
Project Details

TAS has full performance responsibility for the Power Island and will supply the complete system equipment. TAS also provides support for the installation requirements. This installation of the Power Island will be responsibility of the Balance of Plant EPC contractor. Unlike most Greenfield geothermal plants the resource already exists. As such, there is only a minimal amount of rework of the well field pipework and transmission interconnection.

TAS Power Island

The TAS system is provided with rapidly deployable pre-finished modules comprising all the major components to allow quick assembly on site. This eliminates much of the time and risk associated with traditional field construction. The cooling tower is supplied in component form for field erection. The control system and electrical control gear is supplied in a self contained enclosed and environmentally controlled plant-room module. TAS is responsible for commissioning and verifying

Plant Installation



TAS coordinates with the Balance of Plant Contractor prepare the site and install the Power Island. Due the construction techniques employed by TAS, installation scope is minimal. Apart from

site preparation the major scope comprises civil work, interconnections between non adjacent modules and the electrical interconnection to the transmission line. Additionally for this project the Installation Contractor will install certain components purchased by US Geothermal such as water treatment and startup / backup power generation.

Other Work

The only requirements outside the Power Island fence will be the relocation of the transmission interconnect, which will require extending the transmission from the old plant to the new. The well field pipework will likewise need to be reworked for a few hundred feet.

Conclusion

This straightforward repower project has very low risk compared to other geothermal projects; the resource is proven. TAS rapid deployment design further reduces risk associated with extended construction schedules in remote locations. With the second phase already under development there is a substantial potential for further involvement with the full build out for the successful team.