

Christian County Generation, L.L.C  
Response to Solicitation Number: DE-FOA-0000008

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Even though the TEC employs an innovative plant configuration, the individual technologies selected, like ASU, gasification (quench), acid gas removal (AGR) and methanation systems are well proven in process industries and in operation at several US locations.

A license is in place with GE to use its gasification technology for the TEC. Other technologies for air separation and gas removal are commercially available. No difficulties are foreseen in putting in place agreements for the use of such technologies by the Project.

**TEC/I/B/3/ Project Eligibility:**

Qualification Under Section 1703(a) of Title XVII

The Taylorville Energy Center will meet the requirements of both subsections (1) and (2) of Section (a) of Section 1703 of Title XVII:

“(1) avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and

(2) employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued.”

As discussed in TEC/I/B.2 above, approximately 55% to 60% of the CO<sub>2</sub> in the coal will be separated for capture as part of the gasification process. The captured CO<sub>2</sub> will be compressed to approximately 2200 pounds per square inch and delivered either for (a) use in enhanced oil recovery or (b) if such use proves not to be feasible during any period, for injection into the the Mount Simon saline formation for permanent sequestration. The amount of CO<sub>2</sub> emissions that are avoided will be measured by a metering station at the delivery point.

The plant has been designed to provide for CO<sub>2</sub> capture (and not merely designed to accommodate a retrofit to add capture equipment) and will include the compression equipment necessary to inject the captured CO<sub>2</sub> into a CO<sub>2</sub> pipeline and sequester it either by using it in enhanced oil recovery or injecting it into a saline formation. The ICCPSA requires that the Taylorville Energy Center capture and sequester “...through injection into a saline aquifer, a depleted gas reservoir or an oil reservoir, directly or through an enhanced oil recovery process...” at least 50% of the CO<sub>2</sub> that would otherwise be emitted and penalizes the project by up to \$15 million per year (in the form of a requirement to purchase carbon offsets in such amount without the right to pass this cost through in its rates) if the 50% threshold is not achieved.

The Applicant’s plan for meeting the 50% CO<sub>2</sub> sequestration requirement of the ICCPSA is to deliver all of the TEC’s CO<sub>2</sub> production (approximately 3.6 million tons annually) to a third party for use in enhanced oil recovery. Representatives of the Applicant have engaged in discussions with four separate pipeline companies that have each expressed an interesting in constructing a CO<sub>2</sub> pipeline to the Taylorville Energy Center site and purchasing all the CO<sub>2</sub> captured by the TEC for use in enhanced oil recovery, either in Illinois or in the Gulf Coast area. Two such parties have proposed specific contract terms for the CO<sub>2</sub> offtake, but the Applicant is waiting to see which of the candidates is going to be more successful in contracting with other CO<sub>2</sub> production sources before committing to a particular offtaker. We expect to continue these discussions during the FEED study and to enter into a long-term agreement with a creditworthy CO<sub>2</sub> offtaker no later than the financial closing date. Although we expect that the terms under

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which the Applicant will be able to sell CO<sub>2</sub> for enhanced oil recovery will at least offset in whole or in part the capital costs of compressing CO<sub>2</sub> to 2200 pounds per square inch for delivery into a CO<sub>2</sub> pipeline, the Applicant has not assumed any revenue for CO<sub>2</sub> sales in the base case pro forma. Rather, the base case assumes that the Applicant will absorb both the costs of compression and another \$39 million in capital costs associated with the development of a sequestration field. This assumption reflects a significant degree of conservatism which the Applicant believes is prudent for planning purposes but which should not be taken as an indication that the Applicant actually expects to incur these costs without offsetting revenue. Similarly, the base case pro forma does not include any investment tax credits or other federal incentives for sequestering CO<sub>2</sub>, although existing law does provide for such benefits (\$10 per ton for enhanced oil recovery and \$20 per ton for geologic sequestration were provided as part of the recent TARP legislation that was enacted in September 2008).

As mentioned above, the Applicant does not plan to rely exclusively upon its ability to contract with a third party to take delivery of CO<sub>2</sub> for sequestration through enhanced oil recovery. The plant is located at a promising site for geologic sequestration that is 50 miles to the west of the Mattoon, Illinois site that was selected as the preferred FutureGen location in part based upon the favorable geology for sequestration. It also is less than 30 miles to the south and west of the site of the Decatur, Illinois DOE sequestration demonstration project at which 100,000 tons per year (for three years) and a cumulative one million tons of CO<sub>2</sub> produced by Archer Daniels Midland is to be sequestered. This early sequestration work nearby is valuable to the Project effort because it establishes permitting procedures under existing law and regulations for the safe injection of CO<sub>2</sub> into geologic formations with the capacity to receive large volumes of CO<sub>2</sub>. This part of Illinois sits above the Mount Simon formation. During the FEED study period, the Applicant will engage Schlumberger or another qualified consultant to perform a Phase I suitability assessment for a sequestration field at or near the TEC site. The TEC project also benefits from the FutureGen work in Illinois in that the State of Illinois already has passed legislation for the benefit of FutureGen to limit the liability of the FutureGen project for CO<sub>2</sub> injected into the saline formation. This legislation does not apply to projects other than FutureGen, but will serve as a model for legislation that the Applicant will seek to facilitate permanent CO<sub>2</sub> storage from the TEC project.

A permit will be required from the Illinois EPA for injection of CO<sub>2</sub> into saline formations such as the Mount Simon. A recently proposed USEPA rule under the Underground Injection Control (UIC) Program would establish a new class of wells, Class VI, for this purpose. That proposed rule is not expected to be final until early 2011. In the mean time, large scale pilot injection of CO<sub>2</sub> is being permitted in Illinois under the Class I (nonhazardous) and Class VI (experimental) permitting procedures and guidance. The Project contemplates that it will follow this precedent until such time as new regulations are promulgated specifically for CO<sub>2</sub> geologic sequestration. The permitting program is being designed to address potential risks of underground injection of CO<sub>2</sub> in situations such as TEC wherein the injectant will not be deemed hazardous under existing federal and state definitions. The Department of Energy currently is supporting a pilot injection program in Decatur, Illinois, that will provide important information about the risks of underground injection into the Mount Simon formation. According to the Illinois Geologic Survey studies, geologic conditions for underground injection of CO<sub>2</sub> are very favorable in the project area.