Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

November 23, 2004

DOE/EA 1506

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT

for

Changing World Technologies'
Thermal Conversion Process
Commercial Demonstration Plant

Weld County, Colorado

AGENCY: Department of Energy, Golden Field Office

ACTION: Finding of No Significant Impact

SUMMARY: In accordance with the Department of Energy (DOE) National Environmental Policy Act (NEPA) implementing regulations, DOE is required to evaluate the potential environmental impacts of DOE facilities, operations, and related funding decisions. Based on action by the U.S. Congress, DOE has funding available to support the proposed private sector project described in this EA.

The decision to use federal funds in support of the Society for Energy and Environmental Research (SEER) requires that DOE address NEPA requirements and related environmental documentation and permitting requirements. In compliance with the NEPA (42 U.S.C. 4321) and DOE's NEPA implementing regulations (10 CFR section 1021.330) and procedures, this EA examines the potential environmental impacts of DOE's decision to support the CWT-TCP project in unincorporated Weld County, Colorado, including construction and operation of the plant, as well as a No Action Alternative.

The purpose of the Proposed Action, the decision to provide federal funding for the construction of the proposed demonstration plant for the Changing World Technologies' Thermal Conversion Process (CWT-TCP) technology, is to support new technology with the potential to create broad public benefits. The Proposed Action would demonstrate a large-scale technology for the conversion of agricultural residuals/low-value organic streams to energy and other valuable products.

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The U.S. Congress has acknowledged the merit of this project by providing specific funding through DOE. Based on Congressional action, DOE has funding available to support SEER's participation in the proposed CWT-TCP demonstration project.

The proposed project site is located in unincorporated Weld County, Colorado, immediately north of County Road (CR) 24, east of CR 39 and west of CR 41, approximately 15 miles (24 kilometers) south of Greeley. The legal description of the project site is SW ¼ Section 32 Township 3N, R65W and Parcel Number 121332000004. Local access to the project site is via a dirt road off of CR 24, which is also unpaved.

The project site is owned by ConAgra Foods, Inc. and includes approximately 320 acres (130 hectares) of mostly vacant land situated in a rural area comprised of mostly agricultural and industrial uses. Nine leases for oil and gas development held by Patina Oil and Gas are associated with the property, and portions of the property are also leased for grazing. One residence and several buildings associated with the Mile High Turkey Hatchery, Inc. (owned by ConAgra Foods, Inc.) are located in the northern portion of the property. The project site is characterized by shrub and grass-type vegetation, with some disturbed areas associated with oil and gas wells and dirt access roads. Nearby land uses include the Mile High Turkey Hatchery to the north, an auto junkyard and a used tire yard to the east, agricultural fields to the south and mostly undeveloped land with some oil and gas development to the west.

Mixed agricultural residuals and low-value organic streams would be transported to the CWT-TCP plant via truck from nearby agricultural processing facilities. It is expected that 20 trucks per day, each transporting about 20 long tons (20.3 metric tons) per load, would transport to the site materials for consumption in the CWT-TCP process. These materials would be offloaded from the trucks into hoppers to begin the CWT-TCP process.

The CWT-TCP is a five-step process:

- Pulping and slurrying the mixed agricultural residuals and low-value organic streams with water;
- Heating the slurry under pressure to the desired temperature;
- Flashing the slurry into a lower pressure to separate the mixture;
- Heating the slurry once again (coking) to drive off water and produce light hydrocarbons; and
- Separating the products

Water used for operation of the CWT-TCP plant would come from recycled process water generated through the CWT-TCP process itself, except for the initial start-up of the plant, which would utilize water from an existing on-site well to begin the pulping and slurrying process. Clean water recycling would be employed to minimize actual water use. After use in the CWT-TCP process, the excess produced water would be cooled from a maximum of 100 degrees Fahrenheit (F) (37.8 degrees Celsius [C]) (the requirement for cooling of this process water is still under review by the Colorado Department of Health and Environment [CDPHE]) and will be compliant with groundwater standards, as defined by the CDPHE for discharge before release into the 4-acre (1.6-hectare) storage lagoon, with final water destined for spray irrigation.

Process water would also be used for on-site toilets, and a sanitary waste leach field would be located on site to treat this wastewater.

It is anticipated by the project applicants that the proposed CWT-TCP plant would produce 800-1,000 barrels of oil, 10 to 20 long tons (10.2 to 20.3 metric tons) of carbon (coke), 10 to 20 long tons (10.2 to 20.3 metric tons) of dry mineral fertilizer, 5,000 to 10,000 gallons (18,927 to 37,854 liters) of liquid fertilizer (ammonium sulfate/glycerol solution), and 58,000 gallons (219,554 liters) of water on a daily basis, based on an input of 400 long tons per day (tpd) (406.4 metric tons per day [mtpd]) of agricultural residuals and low-value organic streams. Remaining coke-like solids would be accumulated in a storage bin for pickup, as necessary, for off-site use either for blending as fuel, or for use as fertilizer. The CWT-TCP plant would include about five days of storage for oil, and about 10 days of storage for each type of fertilizer produced; however, these products would be picked up on a regular basis (i.e., several times per week). It is anticipated that 10 liquid tanker trucks would travel to and from the site on a daily basis to remove oil products. These trucks would deliver the oil products to local refineries. In addition, it is anticipated that one-to-two trucks per day would travel to and from the site daily to pick up dry fertilizer products, and one-to-two trucks per day would travel to and from the site to pick up liquid fertilizer products. These trucks would likely travel to and from the site via I-76, exiting at State Highway 52, then traveling to the project site along CR 41.

Once fully operational, the CWT-TCP plant would operate year-round for 24 hours per day, seven days per week. The goal is to operate the CWT-TCP facility for two years before a plant shutdown for routine maintenance and cleaning. The plant staff would include 20 to 25 full-time employees.

Given the intent of this Environmental Assessment (EA), scoping input, and preliminary impact findings, the only alternative to the Proposed Action analyzed in the EA was the No Action Alternative.

Based on information associated with the Carthage, Missouri CWT-TCP plant that was received after release of the Draft EA, sections 2.1.4 and 4.8.1 of the EA have been modified to include more current information on odor control equipment and how potential odor issues will be addressed at the Weld County CWT-TCP plant. These text modifications are presented in strike-through/underline format so that the modifications are easily identifiable.

COPIES OF THE FINAL EA ARE AVAILABLE FROM:

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FOR FURTHER INFORMATION ON THE DOE NEPA PROCESS CONTACT:

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DETERMINATION:

Based on the information presented in the Final EA, DOE determines that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act. Therefore, the preparation of an Environmental Impact Statement is not required, and DOE is issuing this Finding of No Significant Impact.

Issued in Golden, Colorado this 23rd day of November, 2004.

John H. Kersten, Manager
Golden Field Office