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September 16, 2013

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THE CALIFORNIA ENERGY COMMISSION'S PRELIMINARY STAFF ASSESSMENT / DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED HYDROGEN ENERGY CALIFORNIA PROJECT'S APPLICATION FOR CERTIFICATION (08-AFC-8A)

Dear Ms. Townsend-Hough:

Thank you for providing the Department of Toxic Substances Control (DTSC) the opportunity to review the California Energy Commission's (CEC) Preliminary Staff Assessment/Draft Environmental Impact Statement (PSA/DEIS) for the proposed Hydrogen Energy of California (HECA) project's Application For Certification (AFC) dated July 2, 2013.

Summary of the Proposed HECA Project

The PSA/DEIS states that the proposed HECA project site is located on 453 acres in an unincorporated portion of Kern County, approximately 7 miles west of the western border of the city of Bakersfield, 1.5 miles northwest of the unincorporated community of Tupman, and approximately 4 miles southeast of the unincorporated community of Buttonwillow. The majority of the project site is currently used for agricultural purposes, and is designated Prime Farmland. The entire project site is also under the jurisdiction of the Williamson Act Contract.

The proposed project includes a 13-mile long natural gas pipeline, 1-mile long potable water pipeline, 2-mile long transmission line interconnecting to a new Pacific Gas and Electric (PG&E) switching station east of the project site, approximately 3-mile long carbon dioxide pipeline, a 15-mile long process water pipeline, and possibly a 5-mile long rail spur for coal deliveries.

The proposed HECA operation would use an integrated gasification, combined cycle power system to produce and sell electricity, carbon dioxide, and fertilizer. Coal and petroleum coke (a refinery byproduct), would be gasified with oxygen obtained from an air separation unit to produce a synthetic gas called syngas. The ratio of coal and petroleum coke used in the proposed process would be approximately 75 percent and 25 percent, respectively. The syngas would be cleaned via scrubbers and absorbers to filter out chlorides, sulfur, mercury, particulates, and other impurities. Ultimately, the syngas would be stripped of carbon dioxide, resulting in a hydrogen-rich gas product.

The coal would be transported from New Mexico via rail, and the petroleum coke would be trucked in from a Santa Maria refinery or other refineries located in southern Californian to the HECA facility.

The hydrogen-rich gas would either be combined with air and used as fuel in a combustion turbine combined-cycle facility to produce electricity (similar to a gas-fired combined cycle), or transferred to an integrated manufacturing complex to produce approximately 1,000,000 tons per year of nitrogen–based fertilizer. The manufacturing complex would produce anhydrous ammonia and nitric acid to manufacture urea ammonium nitrate and urea products. The resulting anhydrous ammonia and nitric acid would be classified as intermediate products used to produce fertilizers, and would not be sold as stand-alone products.

The proposed project would require an estimated average of 7,500 acre-feet of groundwater per year. Industrial supply water would be provided to the site by the Buena Vista Water Storage District, and consist of groundwater with an estimated total dissolved solids concentration ranging from 945 to 2,730 milligrams per liter (mg/L).

The proposed project would capture an estimated 90 percent of the carbon dioxide in the syngas stream, which would be transferred by pipeline approximately 3 miles to the Elk Hills Oil Field, where it would be used by Occidental of Elk Hills Inc., for enhanced oil recovery. The captured carbon dioxide could result in the eventual sequestration of approximately 2.6 million tons of carbon dioxide per year.

The HECA project is proposed to operate for 25 years, and is projected to generate between 405 and 431 megawatts (MW) of electricity per year.

DTSC's Review of Existing Environmental Documentation for the HECA Project

DTSC, in keeping with the intent of Executive Order D-26-01 and D-28-01 (Executive Orders) to expedite the review of proposed thermal power plants for construction and operation, has conducted a review of the "Waste Management Summary of Conclusions" contained in the PSA/DEIS for the above referenced project.

DTSC's review of the proposed project's environmental documentation focused specifically on historic and current land use activities that may have resulted in hazardous contamination at the site project area.

DTSC reviewed the three previous Phase I Environmental Site Assessments (ESAs) and one Phase II ESA conducted for the proposed project. The most recent Phase I ESA (URS, April 2012) was conducted in accordance with the ASTM Standard Practice E 1527-05 for ESAs. Previously, a Phase II ESA (AECOM, December 2010) was conducted to evaluate the recognized environmental conditions (RECs) that were identified in the two previous Phase I ESAs conducted in April 2009, and August 2010. ASTM Standard Practice E 1527-05 defines a REC as the presence, or likely presence of any hazardous substances

or petroleum products on a property under conditions that indicate an existing release, past release, or a material threat of a release into structures on the property, or onto the ground, groundwater, or surface water of the property.

The RECs identified at the project site area include five former underground storage tanks (USTs), unidentified stained concrete structures, a farm equipment wash pad, a former pesticide manufacturing facility, outdoor and indoor tailing piles of unidentified substances, a sump and a number of locations with stained surface soil. Based upon DTSC's review of the environmental documentation provided for the HECA site, it was determined that additional characterization would be required to confirm the lateral and vertical extent of potential soil contamination that may have resulted from the previous farm and pesticide manufacturing operations at the site area.

In March 2013, DTSC and CEC staff participated in a conference call with HECA representatives, and their consultant URS for the purpose of discussing the REC findings reported in the HECA environmental documentation. DTSC recommended that the HECA site property owner enter into a Voluntary Cleanup Agreement (VCA) with DTSC to allow for further evaluation of the property. Specifically, DTSC recommended that a Preliminary Endangerment Assessment (PEA) and a Human Health Screening Evaluation (HHSE) be performed to determine if the condition of the site area is appropriate to allow for the proposed future use. In the event that the PEA determined the site property was contaminated and would require cleanup, DTSC recommended that a Removal Action Workplan (RAW), a Site-specific Health and Safety Plan (HASP), and a Soils Management Plan (SMP) be prepared for DTSC's review and approval. It was also requested that cleanup of the property area be conducted under DTSC's regulatory oversight. The CEC concurred with DTSC's recommendations and proposed that the specific requirements for entering into a VCA to conduct a PEA, HHSE and potentially a RAW, HASP and SMP be incorporated into the PSA/DEIS as Conditions of Certification and/or Mitigation Measures.

DTSC's Concurrence with the Preliminary Staff Assessment's Recommended Condition of Certification WASTE-1 through WASTE-10

The PSA/DEIS states that as currently proposed, the HECA project will cause a significant waste management impact to Kern County. To help ensure and facilitate ongoing project compliance with all applicable federal, state and local laws, ordinances and regulations (LORs), staff proposed conditions of certification WASTE-1 through WASTE-10. These conditions would require the project owner to do all of the following:

- Ensure that existing waste on the project site is identified and characterized, and that any contamination identified is remediated as necessary, with appropriate professional and regulatory agency oversight (WASTE-1, WASTE-2, and WASTE-3).
- Obtain a hazardous waste generator identification number (WASTE-5).
- Prepare Construction Waste Management and Operation Waste Management Plans detailing the types and volumes of wastes to be generated and how

wastes would be managed, recycled, and/or disposed after generation (WASTE-4 and WASTE-7).
- Report any waste management related LORs enforcement actions and how violations would be corrected (WASTE-6).
- Ensure proper disposal of the gasification solids and related waste by-products (WASTE-8 and WASTE-9).
- Ensure that all spills or releases of hazardous substances are reported and cleaned-up in accordance with all applicable LORs (WASTE-10).

DTSC also concurs with the PSA/DEIS's request for outstanding information required for completion of the Final Staff Assessment/Final Environmental Impact Report (FSA/FEIS). Specifically, DTSC supports the CEC's request that the "project owner enter into an Agreement with DTSC for the purpose of fully characterizing, and if necessary remediating the site property so that it is in the appropriate condition to allow for future use. In addition, based on the type of Agreement with DTSC, the applicant should conduct the necessary site characterization to determine if the site remediation is needed and if so, what the scope of remediation would be prior to the Final Staff Assessment."

Thank you for your submittal of a quality and comprehensive PSA/DEIS for the proposed HECA project. DTSC appreciates the effort the CEC has made to address the project issues in a technically sound and methodical manner. Please do not hesitate to contact me at maria.gillette@dtsc.ca.gov if you have any questions.

Sincerely,

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