

LATHAM & WATKINS LLP

March 23, 2010

VIA FEDEX

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-08
1516 Ninth Street, MS-4
Sacramento, California 95814-5512

Re: Hydrogen Energy California Project: Docket No. 08-AFC-08

Dear Sir/Madam:

Pursuant to California Code of Regulations, title 20, sections 1209, 1209.5, and 1210, enclosed herewith for filing please find Applicant's Issue Statement for March 26, 2010 Status Conference.

Please note that the enclosed submittal was filed today via electronic mail to your attention and served on all parties to the above-referenced project.

Very truly yours,



Paul E. Kihm
Senior Paralegal

Enclosure

cc: 08-AFC-08 Proof of Service List (w/encl., via e-mail and U.S. Mail)
Michael J. Carroll, Esq. (w/encl.)
Marc T. Campopiano, Esq. (w/encl.)

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File No. 045049-0001

DOCKET
08-AFC-8

DATE MAR 23 2010

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STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

In the Matter of:)	Docket No. 08-AFC-8
)	
REVISED APPLICATION FOR CERTIFICATION FOR THE HYDROGEN ENERGY CALIFORNIA PROJECT)	APPLICANT’S ISSUE STATEMENT FOR MARCH 26, 2010 STATUS CONFERENCE
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Pursuant to the Committee Order issued on March 16, 2010, Applicant Hydrogen Energy International LLC (Applicant) hereby files its Issue Statement for the March 26, 2010 Status Conference regarding the Hydrogen Energy California Project (“HECA”).

It is Applicant’s understanding that the main purpose of the Status Conference is to obtain final concurrence amongst the affected parties and agencies regarding the relative roles, responsibilities and procedures to be followed in conducting a coordinated permitting and environmental review of the HECA project and the Occidental of Elk Hills, Inc. (“Oxy”) CO₂ EOR project. Applicant and Oxy have been working on this issue with CEC Staff, the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (“DOGGR”), the Governor’s Office, the U.S. Environmental Protection Agency (“EPA”), the U.S. Department of Energy (“DOE”), and other interested parties, for many months. Applicant welcomes the opportunity presented by the Status Conference to resolve any unresolved questions related to this issue, and urges the Committee to press for such resolution. The following is a summary of Applicant’s views on this issue.

1. Summary of Permitting Process for HECA and Oxy CO₂ EOR Projects

Pursuant to the Warren-Alquist Act provisions in the Public Resources Code (section 25000, et seq.), the HECA project can be fully authorized through the facility siting application process currently pending before the CEC. The siting process and the California Environmental Quality Act (“CEQA”) require the CEC to consider all potentially significant environmental impacts of the “whole of the project,” which includes potentially significant impacts from the Oxy CO₂ EOR project. CO₂ sequestration is an integral element of the HECA project.

To ensure that there are no unmitigated significant impacts, the CEC siting process will identify project design features and mitigation measures designed to eliminate or mitigate those potential impacts. To the extent that the CEC identifies potentially significant impacts relating to the Oxy CO₂ EOR project, including the sequestration of the CO₂, as it relates to the HECA project, the CEC can also specify as conditions of certification of the HECA project additional project design features or mitigation measures that should be implemented by other agencies responsible for the permitting of the Oxy CO₂ EOR project. Such additional requirements could include, for example, additional measuring, monitoring, verification, or abandonment standards that the CEC - in consultation with other responsible agencies - deems necessary and appropriate to meet the environmental and other objectives of the HECA project.

When the HECA project is certified, or nearing certification, under the Siting Process, Oxy would submit all necessary applications for the Oxy CO₂ EOR project to all appropriate agencies. These applications would include Underground Injection Control Class II well permit applications to DOGGR. As a responsible agency under the Siting Process, DOGGR would be required to include in any Class II permits issued to Oxy

any and all requirements identified by the CEC. As more fully described in the authority discussion below, DOGGR is fully authorized to issue Class II UIC permits for the Oxy CO₂ EOR project and incorporate all appropriate requirements specified by the CEC pursuant to the Siting Process.

2. Summary of DOGGR Permitting Authority Over the OXY CO₂ EOR Project

California Public Resources Code (“PRC”) and DOGGR regulations provide authority for DOGGR to permit injection and extraction wells and associated well facilities for the purpose of injecting fluids and gases, including CO₂, for EOR, and CEQA would authorize imposition of additional mitigation measures and/or project design elements to measure and verify the sequestration of CO₂ injected for EOR. EPA guidance further supports California’s authority for regulation of these activities. EOR, including CO₂ EOR, has historically been permitted under Class II, and EPA has clearly stated that CO₂ injection for EOR will continue to be permitted under Class II despite any additional rulemaking addressing injection wells intended for the exclusive purpose of CO₂ sequestration.

DOGGR will be permitting the injection of CO₂ for the purpose of EOR. By virtue of the EOR process, the inherent physical and chemical processes naturally results in sequestration of the injected CO₂. Although the Class II permit application may include certain features relating to the demonstration of sequestration, the inclusion of those features does not alter DOGGR’s discretionary authority to issue the permit. These features are appropriate for this EOR project to demonstrate sequestration, and existing statutory authority would allow DOGGR to consider these features and develop enforceable criteria to assure safe operation. Class II has long been used to permit projects injecting CO₂ for purposes of EOR, which is widely recognized as the best platform for the early demonstration of commercial-scale sequestration.

Finally, DOGGR’s regulation of CO₂ injection for EOR and sequestration is entirely consistent with the agency’s mandate to increase the recovery of oil and gas resources within the state. CO₂ injection for EOR is a proven method for enhancing oil and gas recovery, and CO₂ has become a valuable commodity for this purpose resulting in increased demand for CO₂ for EOR. DOGGR’s regulation of EOR and sequestration under Class II permitting will facilitate the economical use of CO₂ to advance oil recovery within the state, thus, advancing its mandate. (For a more detailed analysis of DOGGR’s legal authority to permit the Oxy CO₂ project, please see attached Legal Memorandum on this subject. See also the attached March 1, 2010 memorandum on this subject from Bridgett Luther, Director of the California Department of Conservation, to Dan Pellisier, the Governor’s Deputy Cabinet Secretary for Resources.)

3. Request for Committee Order

Applicant requests that the Committee issue an order in this matter implementing the permitting process summarized above according to the attached schedule. (For more information regarding the scheduling needs of the HECA project, please see the attached letter from Gregory Skannel of HECA to Terry O’Brien, which includes correspondence from the DOE regarding schedule.)

DATED: March 23, 2010

Respectfully submitted,



Michael J. Carroll
LATHAM & WATKINS LLP
Counsel to Applicant

Applicant's Proposed Schedule

Activity	Primary Agency	Date
OXY CO ₂ Project Description Supplement (OXY)	CEC	April 2010
Data Requests for OXY CO ₂ Project	CEC	April 2010
Part I PSA (HECA) issued	CEC	May 2010
Part II PSA (Oxy CO ₂ EOR Project) issued	CEC	July/August 2010
Public Workshops and Public Comment	CEC	45 days
FSA Issued	CEC	February/March 2011
Evidentiary Hearings	CEC	April/May 2011
Proposed CEC Decision Issued	CEC	June/July 2011
30-day Comment Period on Proposed CEC Decision	CEC	August 2011
Final CEC Decision on Certification	CEC	September 2011
DOGGR issues UIC Permit	DOGGR	TBD

Summary of DOGGR Authority to Permit the OXY CO₂ Project

Occidental of Elk Hills, Inc (Oxy). is proposing an enhanced oil recovery project (EOR) utilizing as one of the injectant fluids carbon dioxide (“CO₂”) produced from a power generation facility proposed by Hydrogen Energy California LLC (“HECA”). The California Department of Conservation, Division of Oil, Gas & Geothermal Resources (“DOGGR”) seeks clarification of its authority to regulate Oxy’s proposed CO₂ EOR project (“OXY CO₂ Project”). This summary legal analysis affirms: (1) DOGGR’s authority to issue Class II underground injection control (“UIC”) permits for Oxy’s CO₂ Project; (2) that DOGGR’s UIC program provides the appropriate regulatory framework for any additional permitting criteria necessary or desirable to assure that CO₂ injected for EOR is concurrently sequestered; and (3) that such actions are consistent with DOGGR’s statutory mandate to increase oil and gas resources in the state.

I. PROJECT BACKGROUND

The HECA project involves the capture of CO₂ from an integrated gasification combined cycle power generating facility and the compression and transport of the CO₂ to the nearby Elk Hills Oil Field Unit for use in CO₂ EOR. The CO₂ EOR process will improve oil recovery at the Elk Hills Oil Field Unit through the use of a closed-loop system involving surface and subsurface facilities for injection, production, processing, separation, compression and reinjection of CO₂. The injected CO₂ – which is in a “supercritical” fluid state – reduces the viscosity and enhances mobility of oil to improve extraction. CO₂ is not emitted into the atmosphere during the CO₂ EOR process or after operations cease, other than de minimis fugitive losses from equipment. Injected CO₂ becomes sequestered in pore space voided by oil and other fluids or gasses produced in the EOR operation, as well as through other geochemical trapping mechanisms.

During the operational phase of an EOR operation, some volume of injected CO₂ is extracted (along with hydrocarbons and other gases and fluids) through production wells. Injected CO₂ that is subsequently extracted remains a valuable commodity and is not vented to the atmosphere. Instead, using a closed-loop system, it is separated from the hydrocarbons, other gasses and fluids, and then reinjected for additional EOR use. With every injection cycle 40-60 percent of the injected CO₂ volume becomes sequestered in the formation, making it unrecoverable regardless of the intent of the operator to store or produce the CO₂. The irreversible trapping effect is an unavoidable characteristic of the CO₂ EOR process, one that creates a persistent demand for additional CO₂ over the course of the EOR operation. This predictable demand and geologic permanence is why CO₂ EOR is an ideal technology for sequestering CO₂ emissions.

II. DOGGR’S AUTHORITY TO REGULATE THE OXY CO₂ PROJECT

California Public Resources Code (“PRC”) and DOGGR regulations provide authority for DOGGR to permit injection and extraction wells and associated well facilities for the purpose of injecting fluids and gases, including CO₂, for EOR.¹ The federal UIC Program has been

¹ See generally Cal. Pub. Res. Code Division 3, Chapter 1 and 14 Cal. Code Regs. Division 2.

implemented since 1980 and has responsibility for managing over 800,000 injection wells. California has been delegated authority to implement the federal UIC program since approximately 1981. The programmatic components of the UIC Program are designed to prevent fluid movement into underground sources of drinking water (“USDWs”) by addressing the potential pathways through which injected fluids can migrate into USDWs. These programmatic components are described in general below:

Siting: Injection wells are required to be sited to inject into a zone capable of storing the fluid, and to inject below a confining system that is free of known open faults or fractures that could allow upward fluid movement that endangers USDWs.

Area of Review and Corrective Action: The Agency requires examination of both the vertical and horizontal extent of the area that will potentially be influenced by injection and storage activities and identification of all artificial penetrations in the area that may act as conduits for fluid movement into USDWs (e.g., active and abandoned wells) and, as needed, perform corrective action to these open wells (i.e., artificial penetrations).

Well Construction: Injection wells must be constructed using well materials and cements that can withstand injection of fluids over the anticipated life span of the project.

Operation: Injection pressures must be monitored so that fractures that could serve as fluid movement conduits are neither propagated into the layers in which fluids are injected or initiated in the confining systems above.

Mechanical Integrity Testing: The integrity of the injection well system must be monitored at an appropriate frequency to provide assurance that the injection well is operating as intended and is free of significant leaks and fluid movement in the well bore.

Monitoring: Owners or operators must monitor the injection activity using available technologies to verify the location of the injected fluid, the pressure front, and demonstrate that injected fluids are confined to intended storage zones (and, therefore, injection activities are protective of USDWs).

Well Plugging and Post-Injection Site Care: At the end of the injection project, EPA requires injection wells to be plugged in a manner that ensures that these wells will not serve as conduits for future fluid movement into USDWs. Additionally, owners or operators must monitor injection wells to ensure fluids in the storage zone do not pose an endangerment to USDWs.

DOGGR will not be permitting any aspect of the OXY CO₂ Project for the purpose of determining any sequestration credits or accounting. Rather, DOGGR will be permitting the injection of CO₂ for the purpose of EOR. By virtue of the EOR process, the chemistry and physics of EOR naturally results in sequestration of the injected CO₂.² Although the Class II permit application for the Oxy CO₂ EOR Project may include certain features relating to the demonstration of sequestration, the inclusion of those features does not alter

² See Revised Application for Certification for Hydrogen Energy California, Kern County, California, Appendix F (May 2009).

DOGGR's discretionary authority to issue the Class II EOR permit. These features are appropriate for this EOR project to measure and validate permanent CO₂ sequestration for purposes of demonstrating compliance with CEC and PUC expectations for the HECA Project, and to mitigate any risk of environmental impact associated with the two projects.

Existing statutory authority would allow DOGGR to consider these features and develop enforceable criteria to assure safe operation. Specifically, the California Environmental Quality Act ("CEQA") empowers DOGGR to impose additional mitigation measures and/or project design elements to measure and verify the sequestration of CO₂ injected for EOR and to mitigate potential impacts through DOGGR's discretionary permitting authority.³

UIC Class II permitting by DOGGR, as supplemented by additional CEQA mitigation measures, represents the most sensible regulatory framework to regulate the injection of CO₂ for purposes of EOR and to verify sequestration given DOGGR's existing regulations for, and expertise in, the injection of fluids for EOR. As described above, the existing regulatory requirements for Class II UIC wells adequately assure the integrity and permanence of CO₂ injected into target formations. Furthermore, Class II has long been used to permit projects injecting CO₂ for purposes of EOR, which is widely recognized as the best platform for the early demonstration of commercial-scale sequestration. United States Environmental Protection Agency ("EPA") guidance further supports DOGGR's authority for regulation of these activities. EOR has historically been permitted under Class II, and EPA has clearly stated that CO₂ injection for EOR will continue to be permitted under Class II despite any additional rulemaking addressing injection wells intended for the exclusive purpose of CO₂ sequestration.⁴

Finally, DOGGR's regulation of CO₂ injection for EOR and sequestration is entirely consistent with the agency's mandate to increase the recovery of oil and gas resources within the state.⁵ CO₂ injection for EOR is a proven method for enhancing oil and gas recovery, and CO₂

³ See Cal. Pub. Res. Code § 21000 *et seq.*

⁴ Proposed Rule for Federal Requirements Under the Underground Injection Control Program for Carbon Dioxide Geologic Sequestration Wells, 73 Fed. Reg. 43,492, 43,502 (Jul. 25, 2008) ("CO₂ is currently injected in the U.S. under two well classifications: Class II and Class V experimental technology wells. The requirements in today's proposal, if finalized, would not specifically apply to Class II injection wells or Class V experimental technology injection wells. Class VI requirements would only apply to injection wells specifically permitted for the purpose of GS. Injection of CO₂ for the purposes of enhanced oil and gas recovery (EOR/EGR), as long as any production is occurring, will continue to be permitted under the Class II program.")

⁵ See, e.g., Cal. Pub. Res. Code § 3106(a) (establishing DOGGR's environmental protection authority by mandating the supervisor to "supervise the drilling, operation, maintenance, and abandonment of wells ... so as to prevent, as far as possible, damage to life, health, property, and natural resources...") (emphasis added), § 3106(b) (authorizing DOGGR "to permit the owners or operators of the wells to utilize *all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons....* including, but not limited to, the injection of air, gas, water, or other fluids into the productive strata...") (emphasis added), § 3013 (stating that the Oil and Gas division of the PRC "*shall be liberally*

has become a valuable commodity for this purpose resulting in increased demand for CO₂ for EOR. DOGGR's regulation of EOR and sequestration under Class II permitting will facilitate the economical use of CO₂ to advance oil recovery within the state, thus, advancing its mandate.

As a last matter, we acknowledge the concerns raised at our January 12, 2010, meeting that DOGGR's statutory or regulatory authority expressly prohibits the regulation of the OXY CO₂ Project activity as "storage." Although we have researched this issue extensively, we have been unable to find any such legal restriction or prohibition. We surmise that this concern is a negative extrapolation from provisions in the Public Resources Code that empower DOGGR to regulate certain aspects of "storage" of "gas," where "gas" is defined as "hydrocarbons from earth." Assuming so, we offer the following:

1. The activity sought to be permitted is the injection of fluids for the purpose of enhanced recovery of oil and natural gas. This activity is clearly within the defined parameters of UIC Class II, which does not limit the spectrum of fluids injected for such purposes to hydrocarbons.
2. As noted in our attached memorandum, the U.S. Environmental Protection Agency has expressly indicated that the injection of CO₂ for the purpose of EOR, and resulting sequestration, is and will remain regulated by the EPA pursuant to UIC Class II.
3. The CO₂ used for EOR is in a fluid, rather than gaseous, state. The authority regarding gas storage referenced above would not apply to the injection of fluid CO₂ for the purpose of EOR or any other purpose, and certainly does not prohibit such.
4. The injection of CO₂ for enhanced recovery of hydrocarbons is an activity DOGGR is expressly authorized to permit. We are aware of no legal principle by which the affirmative authorization to permit one activity (i.e., "storage" of "gas") can create the negative inference that other activities the agency is affirmatively authorized to permit (i.e., the injection of CO₂ fluids for the purpose of EOR) are prohibited. In fact, such an inference would be contrary to the basic principle of statutory interpretation that statutes should be read in harmony so as to give them full effect.

construed to meet its purposes, and the director and the supervisor, acting with the approval of the director, shall have all powers, including the authority to adopt rules and regulations, which may be necessary to carry out the purposes of this division.") (emphasis added); Cal. Code Regs. Tit. 14, Subchapter 2 (Environmental Protection), § 1779 ("The Supervisor in individual cases may set forth other requirements where justified or called for.")



DEPARTMENT OF CONSERVATION

Managing California's Working Lands

DIRECTOR'S OFFICE

801 K STREET • MS 24-01 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 322-1080 • FAX 916 / 445-0732 • TDD 916 / 324-2555 • WEB SITE conservation.ca.gov

TO: Dan Pellissier, Deputy Cabinet Secretary for Resources
Governor's Office

FROM: Bridgett Luther, Director
Department of Conservation

DATE: March 1, 2010

SUBJECT: HYDROGEN ENERGY CALIFORNIA (HECA) AND OCCIDENTAL
PETROLEUM CORPORATION (OXY)

Thank you for the opportunity to meet with you. The Department of Conservation (DOC) looks forward to accepting and evaluating the HECA / Oxy project we have been discussing for the last several weeks when documentation about the project is received by my office. I greatly appreciate your support for the resources needed by DOC to carry out these functions in an expeditious, responsive, and proficient manner.

As background, you may recall that for the last three years I have repeatedly expressed my view that DOC is the appropriate State entity to manage the many facets of carbon capture sequestration (CCS) in the State of California. DOC houses the Division of Oil, Gas, and Geothermal Resources (DOGGR) and the California Geological Survey (CGS). The combined foundational expertise of DOGGR and CGS makes DOC the best State agency for the regulation of the many complicated aspects of CCS.

With the above stated, it is important that we specifically identify the problem we now face. Through *primacy* granted by the United States Environmental Protection Agency (US EPA) for Class II wells, DOGGR currently has the authority to permit Enhanced Oil Recovery using a variety of materials as injectants, including CO₂. Yet, DOGGR currently has neither the statutory authority nor the technical staff on hand to regulate pure CCS projects. This was made clear at a January 12, 2010, meeting at your office with representatives of the California Energy Commission (CEC) in attendance.

To address the staffing issue, DOC submitted a Spring Finance Letter that would allow DOGGR to hire appropriate staff to establish a CCS unit for the purposes of Enhanced Oil Recovery within our Underground Injection Control program. We hope for action here that will allow DOGGR to obtain this needed technical regulatory expertise.

I share the Governor's goal of doing everything we can to expedite any approvals we might be in a position to grant in order to create jobs for Californians. Oil and gas production in California is a \$34 billion annual industry that employs more than 25,000 people. Toward this goal, during the last two months alone DOGGR's Oil and Gas Supervisor and many of

Dan Pellissier
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our key staff members have recently met with your office, CEC staff, HECA and Oxy representatives, and US EPA representatives to discuss the interesting and complicated issues presented, and make sure DOGGR is not misunderstood to be an impediment to the HECA and Oxy projects moving forward. We were all very disappointed to learn that some have expressed the opinion that this is not the case. That stated, it should be noted that DOGGR has not received any sort of application for any particular permit, and that I personally, have been in communications with the CEC, the California Air Resources Board (ARB), and key stakeholders regarding this issue.

DOC is committed to working closely with the Governor's Office, our sister agencies like CEC, ARB, PUC, federal agencies such as US EPA, and with stakeholders such as HECA and Oxy to undertake the necessary action regarding CCS projects. We remain committed to carrying out DOC's roles and responsibilities to further enhance the recovery of oil and gas while protecting life, health, public safety, property, and the environment.

As you know, our discussions over the last several months have focused primarily on the two ways in which DOGGR might be involved in evaluating a permit application for the underground injection of CO₂: Enhanced Oil Recovery (EOR) and CCS. The following is a brief discussion of each.

Use of CO₂ for Enhanced Oil Recovery

In the last several decades, DOGGR has permitted tens of thousands of injection permits for EOR. Of these, only a small handful of pilot projects used CO₂. However, DOGGR does have the authority to permit EOR projects that use CO₂. We have been discussing internally whether it is appropriate for DOGGR to adopt regulations for EOR projects that use CO₂ because using CO₂ (as opposed to water or natural gas) presents a host of additional challenges due in large part to the corrosive nature of CO₂. We have not made a final decision in this respect, but believe that any specific EOR regulations could be adopted in advance of receiving a specific permit application from Oxy or otherwise.

If Oxy submits an application to DOGGR for EOR using CO₂, we will evaluate it in the same fair and impartial manner we evaluate all applications. You have our pledge that we will review it as quickly as possible once we receive it.

Carbon Capture Sequestration without EOR

As noted above, DOGGR currently lacks the statutory authority and technical expertise to evaluate and issue permits for stand-alone CCS projects. Not only are the California statutes enumerating DOGGR permitting authority insufficient for this purpose, but a myriad of issues concerning the federal government's jurisdiction must be considered. Please know that DOGGR and DOC are committed to planning for future CCS projects once the permitting pathway is made clear to all involved.

Please know also that DOC's and DOGGR's efforts on this exciting issue will continue. We look forward to working with the Governor's Office to accomplish the goals and objectives presented by this opportunity. To this end, the Department of Conservation, through DOGGR, has taken the following concrete steps to meet the Governor's directive regarding carbon sequestration and storage:

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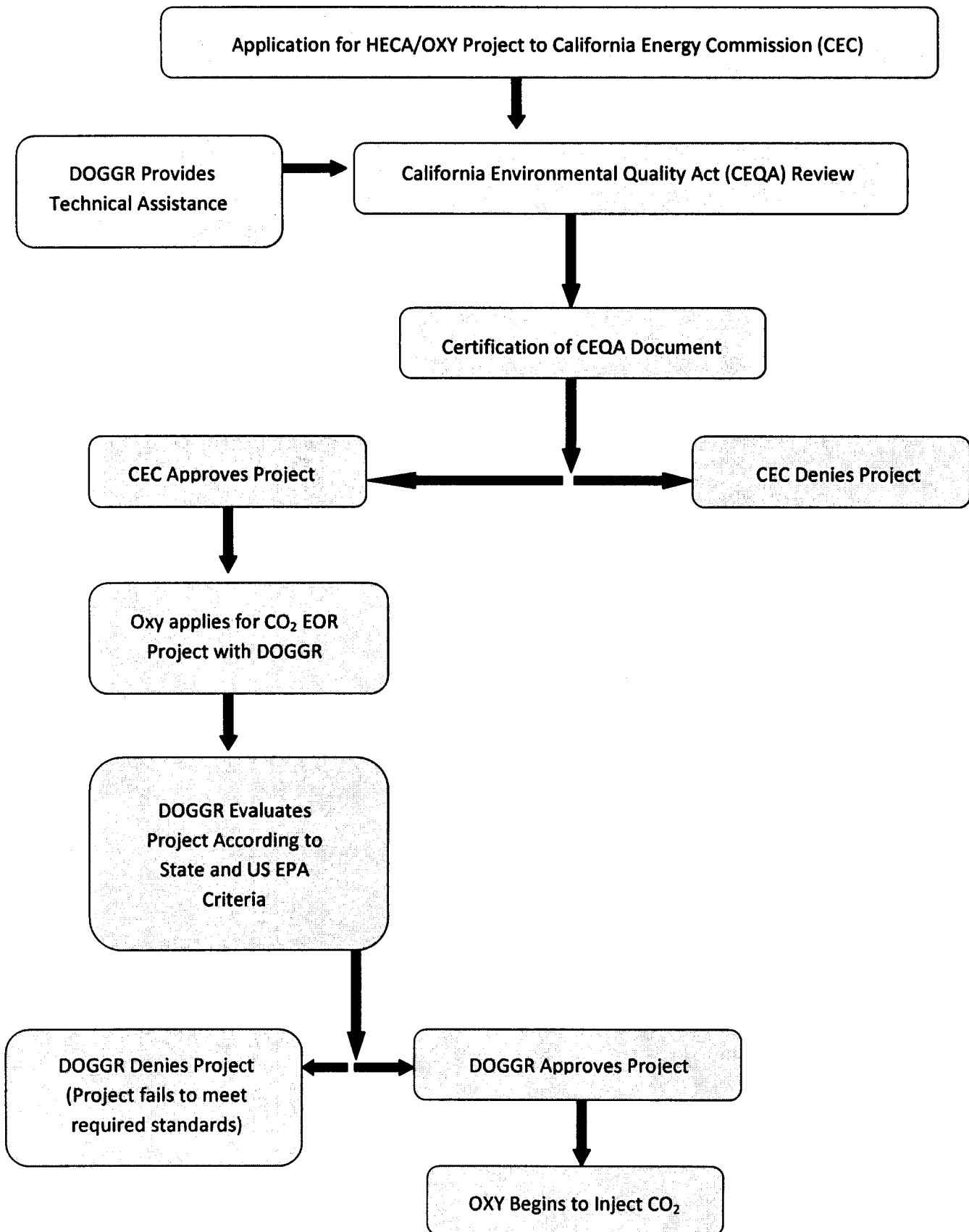
- **1/12/10:** DOC met with staff from HECA and Oxy at the Governor's Office to discuss the HECA project.
- **January 2010:** A DOC CCS Workgroup was developed, which included DOC's Director's Office personnel, DOGGR staff, CGS staff, and DOC Office of Governmental and Environmental Relations (OGER) staff.
- **2/17/10:** DOGGR and DOC met with David Albright from US EPA Region IX to discuss EOR and CCS.
- **2/22/10:** DOGGR met with CEC staff to discuss DOGGR's authority over EOR as it relates to the HECA/Oxy project.
- **Blue Ribbon Panel:** OGER (Marni Weber) is in regular communications with CEC Staff, including Commissioner Boyd's Office, concerning the State of California's Blue Ribbon Panel on this issue. DOC is submitting names to CEC to serve on the Blue Ribbon Panel's Technical Advisory Committee.

In closing, I look forward to continuing to provide leadership with you and appropriate State and federal entities on evaluating and assessing the merits of the HECA/Oxy project, and any other project that may come before DOC.

Attachment

cc: James Boyd, California Energy Commission
Mary Nichols, California Air Resources Board
Michael Peevey, California Public Utilities Commission
Lester Snow, California Natural Resources Agency

CO₂ Enhanced Oil Recovery Project Approval Flowchart





hydrogen energy

February 10, 2010

Via E-mail

Mr. Terrence O'Brien
Deputy Director, Siting, Transmission, and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-16
Sacramento, CA 95814-5512
Tobrien@energy.state.ca.us

Re: HECA Project, DOE Major Milestones, Docket No. 08-AFC-8

Dear Mr. O'Brien:

As requested at our meeting held on December 15, 2009, this letter describes the major milestones, and associated timing, included in the Department of Energy's (DOE) – Hydrogen Energy California (HECA) Cooperative Agreement. As we discussed, in order to ensure federal funding for the HECA Project, including funding under the American Reinvestment and Recovery Act, it is critical that we meet the major milestones in the Cooperative Agreement on a timely basis. Our ability to do so is dependent upon timely completion of the California Energy Commission (CEC) certification process, and key interim steps in that process, including issuance of the Preliminary Staff Assessment.

Pursuant to the Cooperative Agreement, the HECA Project will be developed in three phases: Project Definition (Phase I); Design and Construction (Phase II); and Demonstration (Phase III). Each phase includes milestones that must be met on time in order to complete the phase, move on to the next phase, and ensure the continued flow of federal funding. The failure to achieve the milestones in any phase on time could jeopardize the HECA Project from moving to the next phase and risk the flow of federal funding.

In Phase I, which is to be completed no later than January 2012, the HECA Project is required to achieve technical, commercial, regulatory and permitting certainty. The key milestones that must be completed by the end of Phase I include the following:

- CEC issues its Decision on Certification.
- EPA issues the Prevention of Significant Deterioration (PSD) Permit.
- Project receives California Public Utilities Commission (CPUC) approval.
- DOE issues its Record of Decision (ROD).
- HECA completes Front-End Engineering and Design (FEED).

In order to achieve the certainty necessary to support approval to proceed to Phase II, those key Phase I milestones noted above which are subject to regulatory approval will need to be completed. Only after the completion of those significant milestones, including the receipt of all required environmental permits

Mr. Terrence O'Brien
Deputy Director, Siting, Transmission, and
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and approvals as noted, will HECA complete the Phase I activities that precede the approvals to move to Phase II. Furthermore, the ability to complete certain of the milestones within Phase I is dependent upon achieving certain interim steps associated with other milestones within the same phase. For example, both the final CEC decision and completion of FEED are to be accomplished within Phase I. However, FEED will not commence until receipt of the PSA from the CEC because the PSA provides the HECA Project with a reliable basis to understand potential permit limits and design modifications that are necessary for finalizing the design basis for FEED work. Thus, the PSA is a critical step prior to the start of FEED. There are many such dependent relationships between the milestones within each phase, in addition to the dependency between each of the phases.

Concurrent with entry into the Cooperative Agreement in September 2009, HECA and DOE agreed upon a milestone schedule to assure the appropriate transition between phases and receipt of funding as set forth in the Cooperative Agreement. This milestone schedule provides that the CEC issues the PSA by March 24, 2010. In addition, we believe that this is necessary in order to allow the CEC to complete the remainder of the certification process by the end of Phase I. This is also necessary to allow the HECA project to enter FEED in time to complete the various milestones by the end of Phase I. The milestone schedule also provides that the CEC issues its Decision on the Certification by October 2011. Achieving the milestone schedule with respect to CEC approvals will allow the timely completion of FEED, NEPA assessment, development of commercial agreements and other milestones contained in Phase I. This, in turn, will allow the HECA Project to proceed to Phases II and III, which is when the majority of the federal stimulus funding will be disbursed to HECA.

Attached please also find a letter from DOE emphasizing the importance of timely permitting to project funding:

The timely permitting and development of the HECA Project are critically important to the DOE, because funding appropriated under the American Recovery and Reinvestment Act (ARRA) must be expended by September 2015. The current project schedule offers virtually no cushion regarding expenditure of ARRA funding by that date. Therefore, should overall project delays be incurred due to permitting delays, DOE project funding from the ARRA could be jeopardized.

Also, DOE is also planning to coordinate its National Environmental Policy Act (NEPA) review with the licensing process being conducted by the California Energy Commission to avoid duplication and schedule delays. The Record of Decision (ROD) is required prior to initiation of any construction activities and therefore must be completed prior to initiation of Phase II activities in January 2012.

In summary, the permitting schedule is closely linked and important to the project timeline and our funding support.

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Deputy Director, Siting, Transmission, and
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In Phase II, the Project must complete the following key milestones:

- Finalize all technical design work
- Procure all equipment and material required for construction
- Complete construction of all facilities
- Commission all facilities
- Start up all facilities
- Transition to Operations

During Phase III, HECA must operate the facilities and perform testing to demonstrate plant performance to the DOE. Specifically, HECA will complete the following key milestones:

- Perform testing required to demonstrate plant output, thermal efficiency, specific CO₂ emissions on a pounds/MW-hr basis and provide assurance of CO₂ sequestration to DOE.

I hope that this information provides a better understanding of the overall HECA Project schedule, and the importance of maintaining that schedule if we are to continue and maximize the flow of federal funding to HECA and the California economy. I hope that it also conveys the need to achieve certain milestones early in what may appear to be an otherwise lengthy development schedule. Contrary to what one might assume based on the overall duration of the development schedule, we are on an extremely tight schedule for completing certain interim steps in the permitting process, such as issuance of the PSA. This is due to the interdependence of the three phases of development and the milestones within each of those phases. This is why we have expressed a degree of urgency regarding the need to keep the CEC process moving forward as expeditiously as possible, taking into consideration both our needs and the unprecedented demands being placed on our staff.

Thank you for your continued attention to this important project. If you need any additional information or have any questions, please contact me at 949 349-6411.

Sincerely,



Gregory D. Skannal
Manager, HSSE

CC: Rod Jones, CEC Project Manager
Michael J. Carroll, Latham & Watkins
Asteghik Khajetoorians, Senior Counsel, Hydrogen Energy
Dale Shileikis, URS Project Manager

Attachment



January 8, 2010

Maha Mahasenan
Hydrogen Energy California, LLC
1 World Trade Center, Suite 1600
Long Beach, CA 90831-1600

Dear Maha,

I understand that an issue has arisen regarding the appropriate agency to regulate the use of the carbon dioxide (CO₂) from the HECA project for EOR and sequestration. Specifically, the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR) is uncertain as to whether it has legal authority to allow Occidental Petroleum (Oxy) to use the CO₂ from the proposed HECA project for "permanently sequestering carbon," which in turn raises questions as to how the project would demonstrate compliance with California Law concerning greenhouse gas emissions. As we both know, Oxy will use the CO₂ for well stimulation in an EOR application in the Elk Hills.

To date, all DOE-funded Carbon Capture and Sequestration projects that involve EOR and have already been permitted have done so as EPA Class II wells. All of those projects were DOE Regional Partnership Phase I or II projects, which (as with all DOE funded CCS projects) required additional Monitoring, Validation and Accounting (MVA) of the disposition of the CO₂ as part of the requirements of the Cooperative Agreements with the DOE.

The permitting process that the California Energy Commission (CEC) and DOGGR must go through is a well delineated 17 month process which ends in the CEC issuing a permit. The process is now on hold pending resolution of this issue with the first Data Response and Issues Resolution Workshop having been postponed for the second time. This "first" workshop was already rescheduled for January 19th. It has now been postponed indefinitely due to the issue of DOGGR's authority.

Based on my discussions with HECA, the CEC's processes (and these delays) are not yet impacting the project schedule at this time, although there is only approximately one month of additional time left before schedule impacts occur. However, this issue is raising perceptions of significant risk as to the project's feasibility with its supporters.

The timely permitting and development of the HECA Project are critically important to the DOE, because funding appropriated under the American Recovery and Reinvestment Act (ARRA) must be expended by September 2015. The current project schedule offers virtually no cushion regarding expenditure of ARRA funding by that date. Therefore, should overall project delays be incurred due to permitting delays, DOE project funding from the ARRA could be jeopardized.

Also, DOE is also planning to coordinate its National Environmental Policy Act (NEPA) review with the licensing process being conducted by the California Energy Commission to avoid duplication and schedule delays. The Record of Decision (ROD) is required prior to initiation of any construction activities and therefore must be completed prior to initiation of Phase II activities in January 2012.

In summary, the permitting schedule is closely linked and important to the project timeline and our funding support. I hope that HECA can work with the California State agencies to facilitate the diligent processing of HECA's Application for Certification. Please provide DOE with an

updated schedule (should schedule impact be incurred) and a plan for resolving the permitting issue by January 20, 2010 Please let me know if DOE can provide any assistance in resolving this issue

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. McMillian", with a horizontal line extending to the right.

Michael H. McMillian

DOE Project Manager

National Energy Technology Laboratory

**STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

In the Matter of:)	Docket No. 08-AFC-08
)	
APPLICATION FOR CERTIFICATION, FOR THE HYDROGEN ENERGY CALIFORNIA PROJECT BY HYDROGEN ENERGY INTERNATIONAL, LLC)	PROOF OF SERVICE
)	(February 8, 2010)
)	
)	
)	

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HYDROGEN ENERGY CALIFORNIA PROJECT
CEC Docket No. 08-AFC-08

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HYDROGEN ENERGY CALIFORNIA PROJECT
CEC Docket No. 08-AFC-08

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DECLARATION OF SERVICE

I, Paul Kihm, declare that on March 23, 2010, I served and filed copies of the attached:

APPLICANT'S ISSUE STATEMENT FOR MARCH 26, 2010 STATUS CONFERENCE

to all parties identified on the Proof of Service List above in the following manner:

California Energy Commission Docket Unit

- Transmission via electronic mail and by depositing one copy with FedEx overnight mail delivery service at Costa Mesa, California, with delivery fees thereon fully prepaid and addressed to the following:

CALIFORNIA ENERGY COMMISSION
Attn: DOCKET NO. 08-AFC-08
1516 Ninth Street, MS-4
Sacramento, California 95814-5512
docket@energy.state.ca.us

For Service to All Other Parties

- Transmission via electronic mail to all email addresses on the Proof of Service list; and
- by depositing one paper copy with the United States Postal Service via first-class mail at Costa Mesa, California, with postage fees thereon fully prepaid and addressed as provided on the Proof of Service list to those addresses **NOT** marked "email preferred."

I further declare that transmission via electronic mail and U.S. Mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 23, 2010, at Costa Mesa, California.



Paul Kihm