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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) APPLICANT'S STATUS REPORT 4
FOR THE HYDROGEN ENERGY)
CALIFORNIA PROJECT)
)

Pursuant to the Committee Scheduling Order issued on September 28, 2009, Applicant Hydrogen Energy International LLC (Applicant) hereby files its Status Report 4 with respect to the Hydrogen Energy California Project (HECA).

Coordination of HECA and Oxy CO₂ EOR Project

As indicated in CEC Staff's Status Report 3, dated March 4, 2010, Applicant and CEC Staff, together with Occidental of Elk Hills, Inc.(Oxy), the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) and other interested parties, have been actively engaged in discussions regarding the relative roles, responsibilities and procedures to follow in conducting a coordinated permitting and environmental review of HECA and the Oxy CO₂ EOR project. Applicant appreciates CEC Staff's review of the February 2, 2010 letter from Oxy, in which Oxy laid out a proposed approach for conducting such a coordinated permitting and environmental review, as well as Staff's March 4, 2010 request for additional information regarding the Oxy CO₂ EOR project.

Applicant also draws the Committee's attention to the attached March 1, 2010 memorandum from Bridgett Luther, Director of the California Department of Conservation, to Dan Pellisier, the Governor's Deputy Cabinet Secretary for Resources. In this memorandum, the Department of Conservation confirms that DOGGR will review and evaluate the proposed HECA and Oxy projects and that DOGGR has the authority to permit EOR projects that use CO₂, as proposed by HECA and Oxy in this case. While the memorandum identifies outstanding issues related to DOGGR's authority and expertise to issue permits for stand-alone CCS projects *without* EOR, it is not necessary to resolve these outstanding issues before proceeding with the Oxy CO₂ EOR project,

which clearly involves EOR. Furthermore, the Department of Conservation memorandum also includes an attached CO₂ EOR Project Approval flowchart for the HECA/Oxy projects which substantially follows the proposed regulatory approach set forth in Oxy's February 2, 2010 letter for agency coordination and cooperation with respect to the HECA/Oxy projects. Applicant believes that the clarification provided by the Department of Conservation memorandum paves the way for proceeding with HECA and the Oxy CO₂ EOR project according to the approach outlined in the February 2, 2010 letter from Oxy. CEC Staff has requested a Committee conference to discuss this issue, and the Applicant looks forward to participating in such a conference should the Committee decide to schedule one, and to obtaining written guidance from the Committee detailing the relative roles, responsibilities and procedures to follow for review of the HECA and the Oxy CO₂ EOR projects.

Discovery

Applicant received California Energy Commission (CEC) Staff Data Request Set 1 on October 12, 2009. Certain objections and requests for additional time to respond were filed on November 2, 2009. Subject to the stated objections and requests for additional time, responses to the remainder of Data Request Set 1 were timely filed on November 12, 2009. On December 11, 2009, Applicant filed responses to Staff Data Requests 1, 2, 6 and 19, for which Applicant had requested additional time to respond. On February 1, 2010, Applicant filed responses to Staff Data Requests 17, 65, 77 and 85 through 90, for which Applicant had requested additional time to respond. Also on February 1, 2010, Applicant submitted timely responses to CEC Staff Data Requests Set 2 (Nos. 133 through 152). Subject to objections to certain data requests, the Applicant has now responded to all outstanding CEC Staff data requests. Applicant agrees with CEC Staff that a Data Response/Issues Resolution Workshop should be scheduled as early as possible to discuss the information that has been provided by the Applicant and any outstanding data needs of the CEC Staff.

Applicant received data requests from Intervener Association of Irrigated Residents on October 7, 2009. Certain objections were filed on October 27, 2009. Subject to the stated objections, responses to the remainder of AIR data Requests were timely filed on November 5, 2009.

Public Outreach

- Applicant sent its Winter 2010 Newsletter, aimed at keeping the community informed on developments related to HECA, to over 800 local residents and organizations.
- HECA exhibited at the Kern County Energy and Clean Air Expo on February 16th. The keynote speaker, Mary Nichols, the chair of the California Air Resource Board, noted the HECA project as exemplary with regards to taking action on climate change. HECA also had the opportunity to brief hundreds of stakeholders on the details of the project.
- HECA and Oxy carbon engineers met with Atticus Media Design to prescribe a series of new video and graphic tools that will be used to illustrate the closed loop mechanisms of CO₂ EOR with sequestration.
- HECA representatives participated in the California Partnership for the SJ Valley Forum organized by Supervisor Ray Watson. HECA was part of the County's presentation to the Governor appointed members of the California Partnership panel and a brief project overview was given by company representatives.

- HECA Executive Director participated in the California CCS Stakeholders Collaborative meeting sponsored by the CEC and CPUC. Guest speakers included James Woods, Assistant Secretary for Clean Coal, Office of Fossil Energy, United States Department of Energy.
- The HECA Information Center is now open to the public in the town of Buttonwillow. The Center contains educational displays and videos about the project aimed at informing the local community about the details of the HECA project
- HECA agreed to be a founding member of the California CCS Advocacy Coalition that will include IOUs and oil majors seeking to further understanding of CCS and its role in California's greenhouse gas mitigation strategy, and enactment of public policies supportive of the development of low carbon power.
- Applicant participated in Bakersfield Chamber of Commerce annual dinner and the Taft Chamber of Commerce annual dinner where HECA engaged with the Chamber Presidents and met with Kern County Supervisors and Staff.
- Applicant delivered a Project Overview presentation to the Kern Economic Development Commission quarterly board meeting attended by 60 business leaders and local government representatives from Kern County.
- Applicant met with CCS stakeholders in Washington DC to discuss HECA project status. Briefings included Natural Resources Defense Council, EPA Climate Office, Senate Energy Committee, House Energy Committee, and offices of the California congressional delegation, including Senator Boxer, Representative Kevin McCarthy and Representative Jim Costa.
- Applicant participated in meeting of World Resources Institute CCS Working Group to finalize their Community Outreach and Communications Guidelines for CCS projects.
- Applicant presented at the Winter Meeting of the Gasification Technologies Council in San Diego, CA on February 5, 2010.
- Applicant presented at the International Colloquium on Environmentally Preferred Advanced Power Generation (ICEPAG) meeting in Costa Mesa, CA on February 9, 2010.

Other Important Developments

- On January 7, 2010, Applicant met with San Joaquin Valley Air Pollution Control District regarding various permitting issues.
- Applicant held discussion with US EPA Region 9 regarding providing a schedule for completion of the PSD permitting, DOE taking the lead on the NEPA review and ESA consultation with USFWS and the proposed other Region 9 staffers that may become involved in the review of the HECA Project.
- DOE will act as federal lead agency for purposes of the NEPA review of the project; DOE initiated ESA consultation with the USFWS.
- Applicant conducted workshops in Long Beach, CA on February 9 and San Francisco, CA on February 10, 2010 on the HECA Feasibility Study reports. These reports and the workshop were part of the public disclosure plan approved by the CPUC as part of the funding received from SCE. The workshops were attended by representatives of EPRI, The Utility Reform Network, the Division of Rate Payer Advocates, CPUC Energy Division, and CPUC Commissioners.

Schedule

Attached is a February 10, 2010 letter from HECA to CEC Deputy Director Terry O'Brien, which describes the major milestones, and associated timing, included in the Department of Energy's HECA Cooperative Agreement. In order to ensure federal funding for HECA, including funding under the American Reinvestment and Recovery Act, it is critical that Applicant meet the major milestones in the Cooperative Agreement on a timely basis. Applicant's ability to do so is dependent upon timely completion of the CEC certification process. As explained in the attached letter, the current milestone schedule contemplates issuance of a Preliminary Staff Assessment (PSA) by March 24, 2010. While Applicant acknowledges that meeting this milestone will not be possible given the current circumstances, it is critical that a revised CEC schedule be established which results in the issuance of a PSA as close as possible to this date. Applicant anticipates that scheduling will be an important topic of discussion at the Committee conference that has been requested by CEC Staff, and Applicant intends to provide a proposed schedule for consideration by the Committee once the conference has been set.

DATED: March 11, 2010

Respectfully submitted,

A handwritten signature in cursive script that reads "Michael J. Carroll" followed by a horizontal line.

Michael J. Carroll
LATHAM & WATKINS LLP
Counsel to Applicant



DEPARTMENT OF CONSERVATION

Managing California's Working Lands

DIRECTOR'S OFFICE

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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

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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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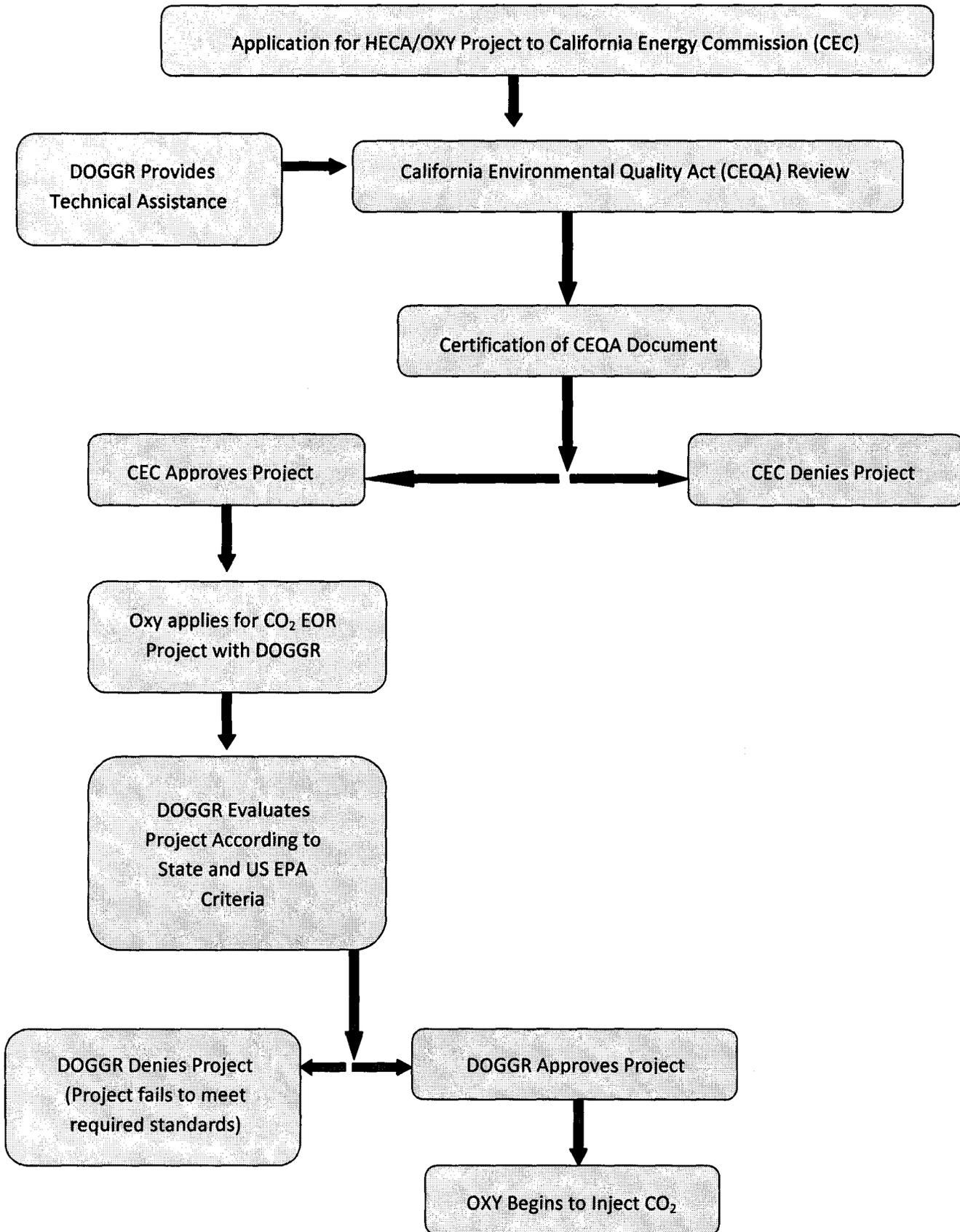
- **1/12/10:** DOC met with staff from HECA and Oxy at the Governor's Office to discuss the HECA project.
- **January 2010:** A DOC CCS Workgroup was developed, which included DOC's Director's Office personnel, DOGGR staff, CGS staff, and DOC Office of Governmental and Environmental Relations (OGER) 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

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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 your 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