DOCKETED

Docket Number:	08-AFC-08A
Project Title:	Hydrogen Energy Center Application for Certification Amendment
TN #:	206241
Document Title:	Hydrogen Energy California Project Monthly Progress Report for September 2015
Description:	N/A
Filer:	Paul Kihm
Organization:	Latham & Watkins LLP
Submitter Role:	Applicant Representative
Submission Date:	9/30/2015 2:54:00 PM
Docketed Date:	9/30/2015

Docket No. 08-AFC-08A: HYDROGEN ENERGY CALIFORNIA, LLC

Hydrogen Energy California (HECA) Project

Monthly Progress Report for September 2015

In compliance to the Committee Order Denying Motion to Terminate Application for Certification and Granting Request for Suspension

Submitted September 30, 2015

Introduction

Pursuant to the terms of the CEC order titled "Committee Order Denying Motion to Terminate Application for Certification and Granting Request for Suspension" handed down on July 3, 2015 HECA is herein responding to and providing its 2nd status update regarding the milestones to be completed on or before January 6, 2015 as set forth in the ruling.

During HECA's discussion in August with David Mohler, the newly appointed Deputy Assistant Secretary, Office of Clean Coal and Carbon Management at the Department of Energy, Mr. Mohler suggested HECA meet with him at DOE headquarters in Washington, DC to further discuss the status of the project, detail the proposed plan for moving forward, and to define the DOE and CCPI grant funds roles in completing the project. That meeting was scheduled and took place on Tuesday, September 22, 2015. Prior to the meeting, HECA provided Mr. Mohler and his team with a detailed proposal for finalizing the development phase of the Project, the LBNL proposal for site characterization and support for Class VI well permit applications, and a revised monthly budget for completing development which includes permitting (at the local, state and federal level), engineering, commercial agreements, and financing work with HECA's bankers. The meeting was productive and positive and concluded with DOE asking HECA to provide additional information regarding the economic underpinnings of the project and a segmented budget to include proposed milestones for ongoing monitoring of project progress. Subsequent to the meeting, HECA provided the Department with the following information:

- The monthly budget for the remaining development period.
- An early budget with suggested milestones for monitoring progress over the next 3 to 6 months.
- The proprietary HECA financial model including sensitivity analyses to commodity pricing, power pricing and interest rate volatility.

Milestone 1:

Documentation of an executed CO2 off-take and carbon sequestration agreement, for a site that is both feasible and available for such use;

As discussed in the previous update submitted August 31, 2015, HECA continues working on activities that support its pursuit of Class VI well permits for permanent CO_2 sequestration.

On Friday, September, 11, 2015 HECA and LBNL participated in a conference call with the Environmental Protection Agency, Region 9 who is responsible for issuing Class VI well permits.

As we mentioned in a previous report, EPA Region 9 has jurisdiction over California regarding Class VI wells. However, EPA headquarters will work closely with Region 9 leveraging the previous work done by the Agency in issuing Class VI well permits for two sequestration projects in Illinois. The initial discussions with EPA focused mostly on the application, the guidance documents created to assist in the application and the permitting process in very general terms. The EPA is prepared to begin discussions with the team (EPA HQ and Region 9 EPA, HECA, LBNL) and in coordination with CEC, upon our formal notice to begin the Class VI well permitting process.

As part of the package HECA prepared for DOE, LBNL provided a proposal for fully modeling and characterizing the proposed sequestration site. The existing geomodel created by LBNL using existing data and information specific to the HECA site and surrounding areas is a key component in HECA's ability to quickly pin point specific target injection sites for testing. LBNL will support HECA in the initial activities necessary to support saline formation storage via injection wells and other permits, including site planning related to injection well placement, design, and operations, monitoring, measurement and verification (MMV) planning and collection of basic and baseline on-site data. LBNL's work can be divided into two main areas, one focused on assisting HECA in meeting EPA UIC Class VI requirements and the other on supporting planning of injection and storage operations. Work in these two areas is divided into three main tasks, which will proceed concurrently or sequentially as appropriate to meet the overall objectives of meeting permitting requirements and planning development of the HECA plant site for saline storage.

Task 1: Preliminary Site Characterization

To guide permitting and planning activities, LBNL will develop a preliminary site characterization and assessment of the HECA plant site's suitability and potential capacity for safe storage of the volumes of CO_2 to be generated by the plant. Specifically, LBNL will integrate any significant additional existing data into the existing Kimberlina geomodel and perform computational simulations using the modified model. The current Kimberlina geomodel is centered at a location approximately 30 km to the east-northeast of the HECA site. That model was built using data from over 200 wells within 50 km of the site; thus, the geomodel encompasses the HECA site. LBNL will adapt this model to be centered at the HECA plant site, extending 50 km from that point, and incorporating data from any additional wells to the west and south, which were outside the boundaries of the original Kimberlina model and that might provide additional well control for key target formations. At this preliminary stage, only publicly available data will be incorporated, for example, well files at CalDOGGR, remote sensing datasets, such as gravity and magnetics, legacy seismic, and published scientific reports or papers.

Task 2: Support for EPA UIC Class VI requirements

LBNL will perform activities that support the delineation and periodic re-evaluation of the Area of Review and preparation of a Corrective Action Plan:

- Coordinate with HECA, EPA, CEC and other state permitting staff as needed to align work planning with permit data requirements
- Provide technical expertise at HECA's request at public hearings and other meetings that occur as part of the permitting process
- Perform site characterization and rock and fluid parameter estimations to support computational modeling of CO2 injection over the life of the project (see Task 1 above);
- Perform computational modeling to assist HECA and EPA in delineating the Area of Review (AoR), in determining any wells to be included in the Corrective Action Plan, and the Remedial Response Plan
- Perform model parameter sensitivity analyses, including analyses to inform the optimum time interval for re-evaluation of the AoR and to determine what operational data is important to re-evaluation of the AoR
- Prepare an archive of modeling inputs and data to support subsequent AoR re-evaluations.

Also, LBNL will support HECA through assisting with the following required information for a Class VI permit:

- The method for delineating the AoR, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;
- The indications from the model of the minimum fixed frequency, at least once every five (5) years, that the owner or operator should propose to reevaluate the AoR;
- The site- and project-specific monitoring and operational conditions that would warrant a reevaluation of the AoR prior to the next routinely scheduled reevaluation;
- How specific monitoring and operational data (e.g., injection rate and pressure) will be used to inform an AoR reevaluation;
- The locations and timing at which old known wells within the AoR may be potentially impacted by injection and which wells should be included within a phased or unphased Corrective Action Plan.

Task 3: Permitting Site Design and Injection Planning

Based on the geologic and injection modeling results and guidance from permitting agencies, LBNL will use its expertise to assist HECA with technical planning related to injection and storage design including detailed site characterization, injection operations planning, and MMV.