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California Energy Commission
HECA proceedings #08-AFC-08A

Re: request by HECA to reinstate the permit proceedings

HECA has not satisfied the conditions set forth by the California Energy Commission for reinstatement. There are outstanding data requests from several parties that HECA has either inadequately addressed or refused to address. They have also not proven or demonstrated the feasibility of the project moving forward in terms of the sequestration of the carbon dioxide, especially for their current plan to inject the CO2 onsite.

It should be noted that "feasible", according to Mirriam-Webster, means that something is likely to work. It is a description of a future action that is far stronger in possibility than simply saying something is possible. To be feasible means a certain amount of information is available to indicate likelihood of success at a level much higher than being theoretically possible. The HECA plan to inject CO2 at the proposed site of their factory and power plant is theoretically possible but has not been shown to be feasible at this time.

Below are some of the outstanding data requests that AIR believes HECA has not responded to adequately to satisfy the requirements of the CEC for reinstatement of the permit proceedings.

AIR, EPA and others have requested a complete environmental justice analysis around the expansion of the coal depot in Wasco. There has been no response from HECA.

AIR has requested a proper and corrected study of the traffic impacts to the three-way intersection of Hwy 43 and Los Angeles and Santa Fe Way for the coal delivery truck route. There has been no response from HECA other than to first leave this intersection out of their analysis completely and then to treat the intersection incorrectly as two separate intersections with the incorrect claim that there are no issues.

Mitigation for HECA's proposed use of water suitable for agricultural irrigation has been requested by AIR. There has been no response from HECA to either offer a mitigation plan or to even acknowledge that one is necessary.

Further study of the pros and cons of air cooling to reduce water use has been requested by various parties such as the CEC. There has been no response from HECA except to say they will not do it.

Mitigation of lost farmland has been requested by various parties such as AIR and Kern County. There has been no response from HECA on a plan to mitigate farmland loss.

Details of the ultimate disposal or reuse of the massive waste stream or gasification solids has been requested. There has been no response from HECA with any details.

HECA is now claiming the ultimate destination of the manufactured urea will be for agriculture uses only. Yet, the urea will be identical to the product used commercially for non-agricultural activities. HECA has not proposed a way to ensure that their urea will only go to agriculture. There is no evidence that HECA has met with Kern County over this zoning issue during the past six months. This response is clearly inadequate.

The ultimate use of the urea as agricultural fertilizer implies a lot of GHG emissions from nitrous oxide (N2O). N2O has around 300 times the global warming potential of CO2. CEC staff have requested an analysis of the quantity of this type of emissions which will come from the use of the fertilizer manufactured by HECA. There has been no response from HECA.

Next, the feasibility and reliability of CO2 disposal at the site needed to be demonstrated and not just assumed based on some incomplete feasibility studies elsewhere in Kern County. The evidence submitted by HECA regarding the WESTCARB feasibility study of 2007 (approximately) does not demonstrate feasibility at the HECA site for the following reasons:

1. The Kimberlina site, where an initial study was performed is more than 18 miles away from the HECA location. Assumptions have been made by geologists that large areas within the San Joaquin Valley may be suitable for geologic sequestration or storage of CO2. Those assumptions are too broad to assume that the HECA location, or any other specific location on the valley floor, is a feasible site for CO2 sequestration.

2. The two locations vary considerably in surface geography so it can be assumed there is wide variation in the subsurface as well. Although the geologic sediments may be in the same order they will vary in thickness greatly between these two locations and some will no doubt disappear entirely and others may appear over a distance of 18 miles. The Kimberlina site was near the eastern Sierra foothills but surrounded by flat, well drained land, for several miles in every direction. The HECA site is against the Elk Hills and not far from the Temblor Range on the west side of the valley. The HECA site also sits in the historical floodplain of the Kern River and just downstream of a 20,000 acre water bank. Earthquake faults would be expected to vary as well in these two areas.

3. The movement of CO2 underground was simulated at the Kimberlina site for an injection period of 4 years. It is not possible to accurately simulate an injected quantity of CO2 which is 10 times greater and will be injected for 25 years based on the results of this smaller simulation at a location more than 18 miles away. This is especially true because no actual injection took place to prove or disprove the assumptions of the simulation.

4. The Kimberlina proposal by WESTCARB was to experiment for four years injecting up to 250,000 tons annually. WESTCARB did a simulation of this quantity of CO2 assuming the four year period of injection. The simulation was into the Olcese layer although HECA claims it was into the Vedder layer. After the proposed initial injection period, WESTCARB proposed to perform a complete appraisal of this initial experiment which would dictate the feasibility of further injections at a larger scale and for a longer period of time. The HECA plan, in contrast, is to start immediately with up to 2.6 million tons of CO2 injection annually (and to continue this rate for 25 years). Of course, HECA proposes an experimental drilling of a pilot well and some initial injection at a future date but they have certainly not demonstrated feasibility of their proposed plan at this time. It is extremely important to understand that WESTCARB never demonstrated the feasibility of CO2 injection in any way which could demonstrate the feasibility of the HECA proposal. They only simulated what might happen over four years with far smaller quantities of CO2 than found in the HECA proposal. They never began the next phase of their feasibility experiment which was to drill a pilot well with some initial injection of CO2 to see what would happen. They certainly never injected CO2 for four years to demonstrate feasibility at the Kimberlina site. A manipulation of a simulation designed for a different geographical area in Kern County does not demonstrate feasibility and HECA has not yet performed even that simple initial step. The proposed manipulation of unproven data by HECA will only be a speculative guide as to what might be possible at the HECA site given that a couple scientific groups have unilaterally declared the San Joaquin Valley basin generally suitable for carbon sequestration and storage. (It should also be noted that there are environmental justice issues associated with that claim of suitability which need further study and analysis. It seems that the San Joaquin Valley is also uniquely suited for sewage sludge disposal, hazardous waste disposal, experimental fracking, illegal oil field waste disposal, waste incineration, and many other ongoing activities which have never been found suitable for the more wealthy and urban areas of the state.) AIR assumes that HECA had six months to prove the feasibility of injecting CO2 at their site but they apparently did nothing other than to exchange a few letters with WESTCARB about a potential collaboration. They should have at least begun the preliminary manipulation of the Kimberlina data to see if anything could be applied the the HECA location. They also had time to drill a pilot well to get an accurate description of the geologic layers under their site. They did neither of these two activities which would have at least begun to demonstrate the feasibility of their plan. It seems the only substantive activity HECA has accomplished for the past six months is to get a tentative agreement

from the DOE to give them more taxpayer money if, and when, they can convince the CEC to reopen the application process. The CEC obviously expected more than that with their order of conditions for reinstatement.

5. Some questions: Does HECA own the mineral rights or do they have a lease on the mineral rights where they propose to inject the CO2? Don't they need some kind of permission to inject into these zones from the mineral rights holders? Also, the plume of injected CO2 will almost definitely move off site to locations under other people's property. How do they do this legally without permission from the land owners and the mineral rights holders all around them? Another question concerns whether the farmland in that are is zoned for the injection of CO2? These questions need answering before this particular site can be considered feasible for injection of HECA's proposed quantities of CO2. Basically, until there is legislation or a court decision giving HECA the right to invade the property of a neighboring mineral right holder with plumes of spreading CO2, HECA cannot possibly say this proposed project is feasible. They have not attempted to address zoning issues either. Our final question is why has HECA not used the past six months to diligently address these issues so that the CEC could have sufficient information to decide the feasibility of moving the project application forward?

6. Conclusion: HECA has not fulfilled the request by the CEC to demonstrate the feasibility, by any common definition of the word, of injecting the proposed quantity of CO2 under the land where the plant is proposed to be built.

Note: The WESTCARB initial studies and descriptions of their simulation at the Kimberlina site are found summarized in the document found at this link:

http://www.netl.doe.gov/publications/proceedings/07/rcsp/pdfs/Myer%20WESTCARB%202007%20Overview.pdf

For a discussion by attorneys plus a California Carbon Storage and Sequestration review panel on the issues of who owns the pore space and what permissions and precautions are needed see the following two links:

http://www.climatechange.ca.gov/carbon_capture_review_panel/meetings/2010-04-22/presentations/CCS-Property_Law_and_Liability_Issues.pdf

http://www.climatechange.ca.gov/carbon_capture_review_panel/meetings/2010-08-18/white_papers/Pore_Space_Rights.pdf

In conclusion, for two major reasons the project application process should be terminated.

One, HECA has not addressed all previously outstanding issues, or data requests, by the deadline imposed by the CEC.

Two, HECA has not found a buyer for the CO2 nor has demonstrated the feasibility of injecting the CO2 themselves underneath the proposed facility by the deadline imposed by the CEC.

Tom Frantz
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