

DOCKET**08-AFC-13**DATE SEP 27 2010RECD. SEP 27 2010STATE OF CALIFORNIA
State Energy Resources
Conservation and Development Commission

In the Matter of:) 08-AFC-8
)
 Hydrogen Energy California) **DECLARATION OF SERVICE**
 _____)

I, Tom Frantz declare that on September 30, 2010, I served and filed copies of the attached **PSA, part 1 comments**, accompanied by a copy of the most recent *Proof of Service* list (most recent version is located on the proceeding's web page) with the Docket Unit OR with the presiding committee member of the proceeding. The document has been sent to the Commission AND the applicant, as well as the other parties in this proceeding (as shown on the *Proof of Service* list), in the following manner:

(Check all that Apply)**FOR SERVICE TO THE APPLICANT AND ALL OTHER PARTIES:**

sent electronically to all email addresses on the Proof of Service list;

AND**FOR FILING WITH THE ENERGY COMMISSION:**

sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
 Attn: Docket No. 08-AFC-12
 1516 Ninth Street, MS-4
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-or-

CALIFORNIA ENERGY COMMISSION
 Presiding Member _____
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 Re: Docket No. [____-AFC-____]

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I declare under penalty of perjury that the foregoing is true and correct.

Tom Frantz

 Name

September 30, 2010

 Date



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COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
FOR THE **HYDROGEN ENERGY**
CALIFORNIA PROJECT

Docket No. 08-AFC-8

PROOF OF SERVICE LIST
Rev. 8/18/10

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Association of Irrigated Residents
Preliminary Comments on the PSA, part 1 for HECA
Docket #08-AFC-8
September 30, 2010

In the document below AIR has copied portions of the PSA, part 1 which follow with comments.

DOCKET	
08-AFC-8	
DATE	
RECD.	AUG 31 2010

HYDROGEN ENERGY CALIFORNIA PROJECT

Preliminary Staff Assessment, Part I

EXECUTIVE SUMMARY

Rod Jones

INTRODUCTION

This Preliminary Staff Assessment (PSA) contains the California Energy Commission staff's independent evaluation of the Hydrogen Energy California Power Plant project (HECA) Application for Certification (08-AFC-8). The PSA examines engineering, environmental, public health and safety aspects of the HECA project, based on the information provided by the applicant, the Hydrogen Energy International LLC, and other sources available at the time the PSA was prepared. The PSA contains analyses similar to those normally contained in an Environmental Impact Report (EIR) required by the California Environmental Quality Act (CEQA). When issuing a license, the Energy Commission is the lead state agency under CEQA, and its process is functionally equivalent to the preparation of an EIR.

It is not legal in California, under CEQA, to piecemeal an EIR. This is part 1 and part 2 is promised later. The 30 day comment period must begin for this first part of the PSA only after both parts are issued. It is not legal to impose a 30 day comment period on part 1 and/or release a FSA on part 1 until after the entire PSA document for the project has been released and there has been a full 30 day comment period for the entire document. AIR finds it impossible to properly make comments on any part of this project without seeing the analysis of the greenhouse gases and water use for this project, for example. The entire project analysis must be available in one piece. You cannot separate the parts from the whole and expect to look at the project in the same way.

The proposed HECA project would gasify petroleum coke (or blends of petroleum coke and coal, as needed) in its gasification block to produce hydrogen which will fuel a General Electric (GE) 7FB combustion turbine generator (CTG) operating in combined cycle mode. The CTG would produce 390 megawatts (MW) gross/250 MW net combined cycle power providing California with baseload power to the grid. The 140

Petroleum coke and coal, “as needed”, is not an accurate description of the project since it is required to burn a certain per cent of coal for the first couple of years in order to receive the DOE award of over \$300 million dollars. Since the project will most likely not go forward without this award, it should be mandatory to describe that requirement to burn mostly coal when the project begins operation.

The proposed project would be located on a 473-acre site (currently used for agricultural production of alfalfa, cotton, and onions), and is comprised of two parcels (Part of Assessor’s Parcel # 159-040-16 and 159-040-18. The project site would be located in western unincorporated Kern County, approximately 1.5 miles northwest of the unincorporated community of Tupman. It is bounded by Adohr Road on the north, Tupman Road to the east, and the California State Water Project aqueduct to the south, and Dairy Road to the west. Adohr Road would provide primary access to the site. Most notably, Stockdale Highway and Interstate 5 are located approximately one mile to the north and three miles to the east, respectively, and the Elk Hills oil field is located approximately one mile south of the proposed project site. (See **Figure 1**, Project Vicinity).

Leaving out the fact that the Bakersfield City limits are 7 miles to the East and the Tule Elk Reserve is 1 mile to the East is misleading to the public about where this project is located. The agricultural land should also be properly described as “prime” farmland with very deep topsoil and with some of the best groundwater in the Central Valley for both quality and proximity to the surface. In other words, there is no better farmland in California.

On September 16, 2009, an Information Hearing and site visit for HECA was conducted at the Elk Hills Elementary School in the unincorporated community of Tupman. On April 12, 2010, staff conducted a publicly noticed Data Response and Issues Resolution workshop in Tupman and discussed the topics of air quality, cultural resources, biological resources, public health/hazardous materials, hazardous waste, and soil and water resources. Participating agencies in the workshop included the applicant, California Department of Fish and Game, U.S. Fish and Wildlife Services, and intervenor.

AIR was the intervenor (intervener) at this meeting. Because no schedule, besides a starting time, was posted before the meeting, the AIR representative had to leave the meeting after a couple hours due to prior commitments. The meeting had started at least 30 minutes late and the part on air quality was left for the last part of the meeting when the AIR representative had already left. This was not good planning on the part of the CEC if they wanted full participation by the public. At least a projected schedule of when the different aspects would be discussed should have been posted beforehand since the meeting lasted for more than 3 hours. There was no indication that the meeting would last so long beforehand. It is also surprising that there was no public advisor available at this meeting. The AIR representative asked Rod Jones about a request that

had been made previously for a recording of the previous scheduling meeting, held at CEC offices, since no transcript was available, and Mr Jones had no reply as to how AIR could get that recording. A public advisor would have been able to assist in that matter. AIR made a valid request to Mr Jones for a copy of the recording shortly after the meeting took place and shortly after the request was made, AIR was told it was available but it was never received. The request still stands as a matter for the record. This was the meeting in Sacramento in the first quarter of 2010 where James Boyd stepped in and helped to decide how the application should be processed and whether there could be two parts.

On June 17, 2009, the Energy Commission staff sent the HECA Revised AFC to libraries in the city of Taft, Tehachapi, Boron, Bakersfield, and Buttonwillow. In addition, documents were also sent to state libraries in Eureka, Fresno, Los Angeles, Sacramento, San Diego, and San Francisco.

Since the coal for HECA must pass through the depot in Wasco, the Wasco library should have been included. Since the air emissions of HECA will have the greatest cumulative effect in Arvin, the library in Arvin should also have been included.

SUMMARY OF PROJECT RELATED IMPACTS

Staff believes that as currently proposed, including the applicant's and the staff's proposed mitigation measures and the staff's proposed conditions of certification, the project would comply with all applicable laws, ordinances, regulations, and standards (LORS). Staff's preliminary conclusions are that significant adverse direct, indirect or cumulative impacts are not likely to occur in any of the technical areas, although three technical areas (biological resources, cultural resources, and waste management) are currently undetermined with respect to mitigation of potential impact(s), and will be analyzed in Part 2 of the PSA. For a more detailed review of potential impacts, as it pertains to the technical areas that will be discussed in this document (Part 1), see staff's technical analyses in the PSA. The status of each technical area is summarized in the table below.

There is a significant adverse impact to air quality in the southern end of the San Joaquin Valley from this project. It is unbelievable that staff can find that this impact has been properly mitigated through the purchase of emission reduction credits authorized by the local air district who have failed conspicuously to reach the one-hour ozone standard by the deadline. This failure to reach this standard is not acknowledged in this PSA and needs to be strongly considered.

The San Joaquin Valley Air Pollution Control District developed an interpollutant trading ratio for sulfur oxides to particulate matter of one-to-one and concluded that this would be protective of managing regional particulate matter impacts and progress towards attainment. However, staff notes that the one-to-one interpollutant trading ratio is lower than what has been historically required by the District on similar past power plant cases, and the methods used by the District in developing the ratio are subject to oversight by the U.S. Environmental Protection Agency, which may affect future power plant cases.

So, the 1:1 ratio looks suspicious and is, in fact, illegal and without proper basis. What is the CEC going to do about it? It seems you are letting it slide and waiting on another agency, EPA, to take action. The CEC has the duty to not allow this and to demand proper mitigation at proper ratios. It is up to the applicant to then appeal to EPA for relief is appropriate. The CEC has the process backwards.

HAZARDOUS MATERIALS MANAGEMENT

The presence of numerous chemical processes – specifically the larger gasification process and sulfur recovery process that will require large amounts of hazardous materials in closed tanks and piping at elevated temperature and pressure – pose significant risks if not managed properly. Therefore, staff is proposing that the project owner be required to develop a Process Safety Management Plan (PSM Plan), which includes a Hazard and Operability analysis to address several different processes, a Risk Management Plan (RMP) which would include several new Offsite Consequence Analyses, and a Spill Prevention Control and Countermeasures (SPCC) Plan. Staff believes that these plans will identify potential system failures and mitigation to reduce the risk of off-site consequences to the public to less than significant.

The safety and accident record of BP should be noted at this time and extra requirements for safeguards, insurance, and redundancy in safety equipment plus extra inspections by outside agencies should be part of this approval. It is not enough, given the historical record of a company like BP, to simply require a PSM Plan and hazard assessments as proposed.

ALTERNATIVES SUMMARY

The “Guidelines for Implementation of the California Environmental Quality Act,” Title 14, California Code of Regulation, Section 15126.6(a), provides direction by requiring an evaluation of the comparative merits of “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” In addition, the analysis must address the “no project” alternative (Cal. Code Regs., tit. 14, §15126.6(e)). A brief discussion of the proposed project’s alternative normally appears in this section. Alternatives will be discussed in Part 2 of the PSA.

Again, the proposed project areas covered in part 1 cannot be properly analyzed because AIR cannot see the alternatives. There are alternatives that would greatly affect air quality emissions, for example, and AIR cannot discuss them in the air quality review. That doesn’t make sense and is highly illegal if no further comment on the air quality review is allowed.

SOCIOECONOMICS

Important public benefits include both the short-term construction and long-term operational related increases in local expenditures and payrolls, as well as sales tax revenues. Estimated gross public benefits from the HECA project include increases in sales taxes and employment payrolls (See Table 6 in Socioeconomics for summary of economic benefits).

The loss of prime farmland is not mentioned. That is critical to the socioeconomic analysis.

POWER PLANT EFFICIENCY

The project will provide both, baseload and peaking power to help meet the regional electricity demands, by doing so in a fuel-efficient manner, through installing the most modern gas turbine generators available (See Power Plant Efficiency).

Using enough fuel to produce 390 MW but only getting 250 MW is not efficient by any measurement. It is certainly not fuel efficient. Please correct this statement to read: "This is a very inefficient power plant but because it collects some of the CO2 emissions, there are a few at the CEC who think it is worth this inefficiency".

On May 28, 2009, HEI submitted a revised AFC that superseded and replaced the previously filed July 31, 2008 AFC in its entirety. On August 26, 2009, the Energy Commission accepted the revised AFC as complete. The determination initiated Energy Commission staff's analysis of the proposed project. If approved by the Energy Commission, the proposed HECA project would be the first of its kind to be constructed and operated in California. The proposed HECA facility would not be the average fossil fuel facility in that it would generate electricity while increasing California's domestic oil supply.

The public needs a well to wheels analysis to see how much this facility will increase the domestic oil supply and not just make a bland statement that leads a person to think this is a wonderful project. Prejudiced statements like that have no place in an objective analysis like this PSA.

HEI's overall objective is to design, construct and operate an integrated gasification combined-cycle (IGCC) facility that will gasify 100% petroleum coke or blends of petcoke and coal, as needed to produce hydrogen on a commercial scale; capture up to 90% of the carbon produced in this gasification process for low carbon power generation to help meet California's future electrical power needs, and provide CO₂ to the Occidental of Elk Hills, Incorporated's (OEHI) existing enhanced oil recovery operations. As described in the revised AFC, the applicant's key project objectives are as follows:

How is the CEC defining low carbon power generation? This project may produce less CO₂ than a conventional fossil fuel plant but it is not nearly low enough to meet the commonly stated needs of 2050 for future low carbon power generation. Please justify this statement in terms of California's goals for 2050.

If approved by the Energy Commission, HEI would commence construction of HECA in December 2011. The project is expected to take about 44 months for construction, including site preparation. Commissioning and initial startup would occur October 2014 through August 2015, and commercial operation of the proposed project would begin September 2015.

Do they already have the investors lined up? Without known investors how can it be said construction will begin in 2011. That is someone's dream timeline and not based on the reality of where the money will come from and when it will be available.

construction period would be 740 workers. During operation, HEI estimates that operation and maintenance (O&M) of the project would require 100 skilled full-time employees, including 50 to 60 shift workers (e.g., management and engineers, shift

How many truck driving jobs are included in the 100 during operation? Truck driving is not a skilled job. Why not mention there will be tremendous amounts of daily trucking associated with this project when talking about employment opportunities? This misleads the public.

The total construction cost for the project would be \$1.6 billion. Construction costs (total payroll) including cost of equipment, materials and supplies required by the project is estimated to be \$1.25 billion. It is expected that the concentration of labor workforce for the project would reside in Kern and Los Angeles counties, which have a sufficient and available construction workforce. With 60 % of the construction workforce originating from the Kern County labor force. An estimated \$750 million (60% of non-labor construction cost) would be spent within Kern County on materials and supplies, while the remaining materials, including the project turbines would be purchased outside of Kern County (HECA 2009a, p. 5.8-21)

Please explain the discrepancy between the \$1.6 billion quoted here and the \$2.3 billion project cost quoted in many other publications.

HECA would be designed for an operating life of a minimum of 20 years, unless the generation power plant is still economically viable beyond that point. At an appropriate point beyond that, the project would cease operation and close down. At that time, it would be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Facility closure would need to be consistent with laws, ordinances, regulations and standards (LORS) in effect at the time of closure. LORS pertaining to facility closure are identified in the technical sections of this assessment.

They need to guarantee the land will be put back exactly as it was and be available as prime farmland again if they are only to operate for these few years.

The most significant emission source of the HECA would be the CTG/HRSG train. The power block design would be optimized for performance on hydrogen-rich fuel, 100% natural gas, or co-firing hydrogen-rich fuel and natural gas. Most of the hydrogen-rich fuel from the gasification plant would be used to fully load the CTG, with any excess (up to about 10 to 14%) duct fired in the HRSG. The CTG would operate on hydrogen-rich fuel, natural gas, or a mixture of the two (45 to 90% hydrogen-rich fuel) over the emission compliance load range of 60 to 100%. The CTG would be co-fired with natural gas as required to maintain baseload operation whenever the quantity of hydrogen-rich fuel is insufficient... (HEI 2009a, p. 5.1-18).

How much CO2 is expected to be released annually from the natural gas fuel?

Unlike most power plants in California, the proposed HECA facility would use domestic supplies of solid feedstock. The feedstocks for the project include the following sources that are discussed below in more detail:

What is being hidden with this statement is that coal will be brought to California for a power plant which is not legal in California any longer.

The petcoke is expected to be the lowest cost feedstock available to HECA, and would likely come from refineries in the Los Angeles, Bakersfield, or northern California areas, and other regional areas. The consumption of the feedstock (petcoke and coal) would be approximately 16,530 tons per day (tpd) and 6.0 million tpd, respectively. The petcoke and coal would be transported to the project site by truck. Coal would be brought in-state by rail and then loaded onto trucks at a nearby transloading terminal.

There is no pet coke being produced in Kern County. Please remove that statement. What does it mean to say 6.0 million tpd of coal would be consumed? Please clarify. How far away is the transloading terminal? The term "nearby" is inaccurate if the distance is more than 10 miles.

Molten sulfur -- As a result of operation, the proposed HECA project would produce molten sulfur, which would be sold and transported by truck off site for agricultural and other uses, and

Gasification solids -- The exact composition of the gasification solids cannot be determined until HECA is operational. But the applicant has stated that the gasification solids are consistent with the proposed feedstock materials.

Is the sulfur suitable for direct agricultural use or does it contain contaminants which have to be removed before applying this material to farmland? Farmers could take this material not knowing its true composition like they take fly ash today from coal plants because no one is regulating the practice.

Natural gas is required to start up the combustion turbine to the load required to accept hydrogen-rich fuel. Natural gas also serves as a backup fuel to allow electric power generation to continue when hydrogen-rich fuel is not available due to, for example, maintenance of the gasifier unit. Natural gas is also used to fuel the auxiliary boiler, HRSG duct burners, flare pilots, startup of the SRU, and support fuel for the SRU tail gas thermal oxidizer. Natural gas is also used to preheat the gasifier refractory. The natural gas supply meter station will be located within the Controlled Area, southeast of the proposed HECA site (HECA 2009a, p. 2-15).

How much natural gas usage is proposed in actual quantities?

WATER SUPPLY

Brackish ground water would be used for the HECA project supplied by the Buena Vista Water Storage District (BVWSD), a local water district located to the northwest of the proposed project site. The Brackish water supply pipeline would be approximately 15-miles in length and would be used at the project for raw water supply (e.g., cooling tower makeup, evaporative cooling, fire water, gasification, service water, and steam generation).

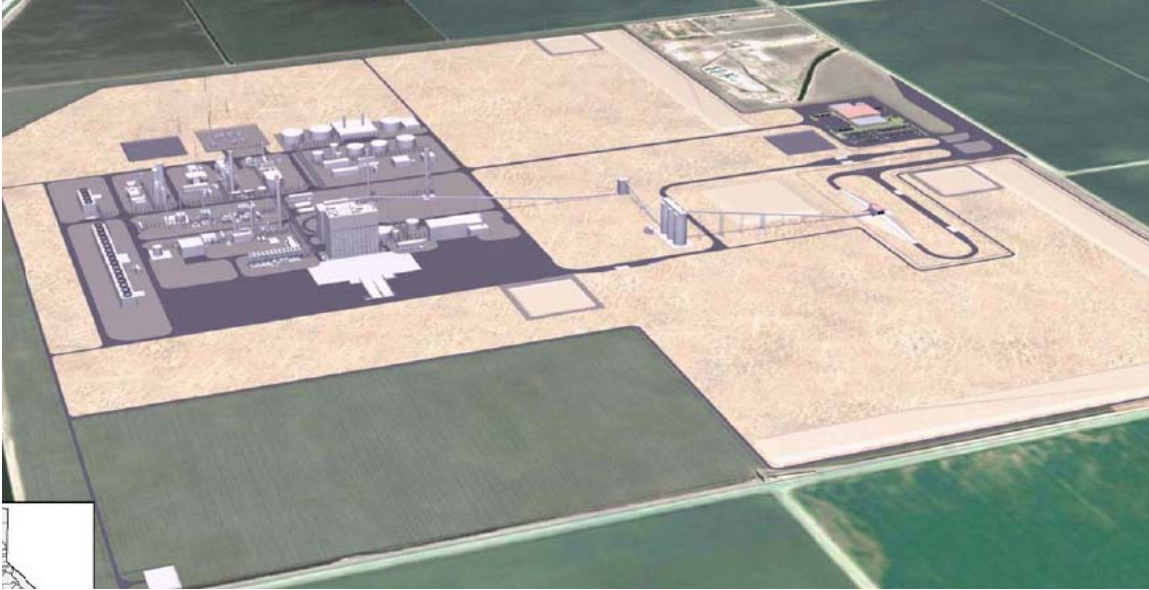
Brackish water is a relative term and slightly brackish water can still be used for irrigation of certain crops, especially if it is mixed with a source of fresher water. A determination needs to be made of the average TDS of this water and the projected TDS in future years as water is removed from the underground area. At a stated level of TDS, HECA has to guarantee they will no longer use that water for their wasteful cooling needs.

The proposed average daily water use for HECA would be 4.2 million gallons per day (mgd) on a calendar year basis, and maximum daily use would be 6.2 mgd during hot summer days. Potable water would be supplied through a water supply pipeline

For every hot day does that mean there will be cold day where the use will only be 2.2 million gallons per day? How is the average calculated?

The gasifier used for HECA would produce a solid slag by-product called gasification solids, which would consist of ash from the petcoke, fluxant, and unconverted carbon that exit the gasifier during the solid phase operation of the project. Gasification solids produced from the use of feedstock that is at least 50% coal is excluded from hazardous waste regulations and requirements, per the exclusions in applicable in federal and California regulations (i.e., Title 40 of Code of Federal Regulations (40 CFR) Section 261.4 (b)(7)(ii)(F), and California regulation 22 CCR Section 66261.4(b)(5)(A)).

This sounds like a real incentive for HECA to have a fuel supply of at least 50% coal at all times. Why does this PSA indicate that pet coke would be the main fuel when it clearly is not the main fuel?



This figure of the project description shows a very small area of the property that will still be farmed. This is inconsistent with other statements of hundreds of acres left as farmland. Also, it is not a proper mitigation of lost farmland for HECA to state the remaining farmland on the site will be in permanent agriculture. How, exactly is this loss of prime farmland going to be mitigated?

shipped overseas, and coal, from mines located outside of the State of California, as feedstocks to generate the hydrogen-rich fuel that will be the primary fuel for a combined cycle gas turbine. The project includes the use of coal due to requirements of the U.S. Department of Energy. The HECA project would be a 390 MW gross, 250 MW net baseload electrical power facility that would occupy 473 acres of what is currently farmland located in an agricultural area of the county, 2.5 miles northwest of the unincorporated community of Tupman.

The coal is only because of DOE requirements in order for DOE to give the project \$300 million? Why is that fact not included? Also, is there any guarantee that the project will not use coal once they have satisfied DOE requirements? If not, then how much coal will be used per year after these requirements are met?

- Whether HECA is likely to cause significant air quality impacts, including new violations of ambient air quality standards or contributions to existing violations of those standards (Title 20, California Code of Regulations, section 1742 (b)); and
- Whether the mitigation proposed for HECA is adequate to lessen the potential impacts to a level of insignificance (Title 20, California Code of Regulations, section 1742 (b)).

Obviously, HECA will contribute to existing violations of the one-hour ozone standard and just as obviously, using ERC's as mitigation does not prevent their contribution to these violations. There is no proof otherwise in this document.

Wind speeds are generally higher in summer than in winter and are typically north-northwesterly winds. During the spring, summer, and fall, the stronger winds are caused by a combination of offshore and thermal low pressure resulting from high temperatures in the Central Valley. During the winter months, winds are more variable and are

An important fact, not noted anywhere, is that these northwesterly winds blow ozone precursors from the HECA area and from the oil fields in the same general area, towards the part of the valley where Arvin is located. Arvin has the worst air in the nation except occasionally, a mountain area above San Bernadino, where rich people have cabins called Crestline. If particulate pollution is considered with ozone levels, then Arvin definitely has the worst air in the nation. Somewhere in this document, this must be acknowledged and analyzed or an environmental justice issue arises.

**Air Quality Table 3
Federal and State Attainment Status for the San Joaquin Valley**

Pollutant	Attainment Status	
	Federal	State
Ozone – 1 hour	No Federal Standard ^b	Nonattainment/Severe
Ozone – 8 hour	Nonattainment/Extreme	Nonattainment
CO	Attainment ^a	Attainment
NO ₂	Attainment ^{a,d}	Attainment
SO ₂	Attainment ^e	Attainment
PM10	Attainment ^c	Nonattainment
PM2.5	Nonattainment	Nonattainment

Source: SJVAPCD 2010b, U.S. EPA 2010a

^a Unclassified/Attainment – The attainment status for the subject pollutant is classified as either attainment or unclassified.

^b Effective June 15, 2005, the U.S. EPA revoked in the federal 1-hour ozone standard, including associated designations and classifications. However, U.S. EPA had previously classified the SJVAB as extreme nonattainment for this standard and redesignated the SJVAB as extreme nonattainment effective June 4, 2010.

^c On September 25, 2008, U.S. EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 maintenance Plan.

^d - Nitrogen dioxide attainment status for the new federal 1-hour NO₂ standard is scheduled to be determined by January 2012.

^e - Sulfur dioxide attainment status for the new federal 1-hour SO₂ standard is scheduled to be determined by June 2012.

It is extremely important to note that even though the 1-hour ozone standard has been revoked, the SJVAB still had to reach that standard by 2010, and has failed to do so. This should have been stated. What is even more important is that there have been violations of that standard on at least 6 different days this year and that shows the plan was inadequate and all assumptions in that plan are suspect. Because that standard has not been reached by the deadline there is a need for a different analysis of this project by the air district and by the CEC.

The proposed project site is an undeveloped SJV area in western Kern County, approximately 2.5 miles northwest of the unincorporated community of Tupman and approximately 7.0 miles west of the border of the city of Bakersfield.

The farmland the site sits upon has been developed significantly. Extensive land leveling for irrigation has been done plus wells and pipelines have been constructed. Soil

improvements have also taken place through the years. It is incorrect to describe the area as “undeveloped”. There was even a fertilizer industry located on the site a few years ago.

The monitoring station located closest to the proposed project site is the Shafter-Walker Street Station, which is approximately 13 miles northeast of the project site. This station monitors ozone, NO₂, and VOCs. The next closest monitoring stations are the Bakerfield-5558 California Avenue and the Bakersfield Golden Highway stations, located approximately 18 miles and 21 miles east of the project site. These two stations monitor all pollutants, except SO₂. The latest SO₂ data from these stations are dated year 2001, and the Fresno First Street monitoring station, located approximately 100 miles to the north northwest, is the only ambient pollutant monitoring station within the SJVAB which currently measures SO₂.

There is a conspicuous failure here to mention the Arvin monitoring site for ozone which is located downwind of HECA and downwind from all of the nearby oil field pollution. This failure ignores that fact that Arvin experiences the worst air in the nation and this project will make that air even worse as NO_x and particulate emissions are transported towards the Arvin area and added to the general pollution they already experience which is almost totally transported from other areas. Arvin is also very similar to the HECA site in that it is up against some higher elevations which can trap air below.

Air Quality Table 4 summarizes the historical air quality data for the project location, recorded at Shafter-Walker Street station for ozone (2004-2009) and NO₂ (2004-2009), Bakersfield-5558 California Avenue for PM₁₀ (2004-2009), PM_{2.5} (2004-2009), and CO (2004-2005). CO concentrations for the years 2006-2009 were recorded at Bakersfield-Golden State Highway monitoring station. SO₂ data are collected from the Fresno-1st Street station for 2007-2009. In **Air Quality Figure 1**, the short term normalized concentrations are provided from 1998 to 2009. Normalized concentrations represent the ratio of the highest measured concentrations in a given year to the most-stringent applicable national or state ambient air quality standard. Therefore, normalized concentrations lower than one indicates that the measured concentrations were lower than the most-stringent ambient air quality standard.

Although Shafter is closest for monitoring of NO₂ it is not the most appropriate site for historical air quality for the project location. That site would be Arvin. The HECA site is nearby massive oil field operations. Shafter is not but Arvin is downwind from oil operations just north of Bakersfield and downwind from Elk Hills operations. It is obviously a better site to use and a more conservative choice since the air is far worse in Arvin than in Shafter on any given day. It is convenient for HECA that Shafter is closer than Arvin but it is an environmental injustice to use Shafter data instead of Arvin data for historical air quality data.

Summary

In summary, staff recommends the background ambient air concentrations in **Air Quality Table 5** for use in the modeling and impacts analysis. The maximum criteria pollutant concentrations from the past three years of available data collected at the monitoring stations near the proposed project site, excluding exceptional events, are used to determine the recommended background values.

Not the correct background for NO2 as previously noted. You must do this part over using Arvin data to have any credibility.

Where possible, staff prefers that the recommended background concentrations come from nearby monitoring stations with similar characteristics. For this project the Shafter-Walker Street monitoring station, providing the ozone and NO₂ background concentrations, is the closest monitoring station to the project site. The Bakersfield-5558

Again, we repeat that although Shafter is the closest it is not the station nearest with similar characteristics. Because of geography, Shafter is nothing like the HECA site with its location so near to the oil field operations along Hwy 33 and in the Elk Hills. Shafter is nearby almost total farmland in contrast. Shafter is not up against hills and higher mountains as the HECA site. Arvin has hills and mountains behind it also. Arvin is the most similar site and the most conservative site for meaningful and appropriate background data.

Air Quality Table 14
Net Emission Difference in Feedstock Transportation - SJVAB, ton/year

	NOx	CO	VOC	SOx	PM10	PM2.5
Current-Practice Scenario						
Route 1 (CA Petcoke, Santa Maria Area)	---	---	---	---	---	---
Route 2 (CA Petcoke, Carson Area)	---	---	---	---	---	---
Route 3 (CA Petcoke, Bakersfield Area)	1.61	0.55	0.13	0.003	0.07	0.06
Route 4 (CA Petcoke, Bakersfield Area)	8.86	3.01	0.72	0.02	0.38	0.31
Misc. Trucks	---	---	---	---	---	---
Coal	---	---	---	---	---	---
Basin Total	10.47	3.56	0.85	0.023	0.45	0.37
Proposed Project Scenario						
Route 1 (CA Petcoke, Santa Maria Area)	5.93	2.81	0.60	0.04	0.30	0.21
Route 2 (CA Petcoke, Carson Area)	4.95	2.34	0.50	0.03	0.25	0.17
Route 3 (CA Petcoke, Bakersfield Area)	0.26	0.12	0.03	0.0017	0.01	0.01
Route 4 (CA Petcoke, Bakersfield Area)	0.26	0.12	0.03	0.0017	0.01	0.01
Misc. Trucks	1.75	0.83	0.18	0.01	0.09	0.06
Coal	3.86	1.03	0.28	0.28	0.15	0.13
Basin Total	17.01	7.25	1.61	0.36	0.82	0.58
Net Emissions Increase	6.54	3.69	0.77	0.34	0.37	0.21

Source: HEI 2009c

As shown in **Air Quality Table 14**, the net emissions for fuel transportation within the SJVAB are expected to increase for all criteria pollutants.

The CEC has to remove Bakersfield from the calculations in table 14 to get the true net emissions increase. There will be no pet coke available from the Bakersfield area because that refinery is permanently shut down and now operated as a different kind of refinery producing no pet coke. This has been known for at least six months and the refinery has been shut down for more than 18 months. The net emissions increase for NOx should be 17.01 ton/year. Table 17 should include this change and it should be noted in all other relevant calculations. 10.5 additional tons of NOx should not be ignored so easily.

Staff reviewed the background concentrations provided by the applicant, replacing them where appropriate¹⁶ with the available highest ambient background concentrations from the last three years at the most representative monitoring stations as show in **Air Quality Table 5**. Staff added the modeled impacts to these background concentrations, and then compared the results with the ambient air quality standards for each respective air contaminant to determine whether the proposed project's emission impacts would cause a new exceedance of an ambient air quality standard or would contribute to an existing exceedance.

The CEC must do the analysis again with the Arvin data and see if the conclusions are any different. No doubt, when this is done, there will be a more severe impact modeled and that is the reason Shafter was chosen by the applicant. There is no reason for CEC to go along with that choice.

HECA Approved ERC List

ERC Certificate	Pollutant	1 st Quarter lbs	2 nd Quarter lbs	3 rd Quarter lbs	4 th Quarter lbs
S-3305-1	VOC	14,625	14,625	14,625	14,625
S-3306-1 (split)	VOC	11,437.5	11,437.5	11,437.5	11,437.5
S-3306-1 (split)	VOC	7,937.5	7,937.5	7,937.5	7,937.5
S-3273-2	NOx	120,500	120,500	120,500	120,500
C-1058-2	NOx	10,100	10,100	10,100	10,100
C-1059-2	NOx	21,900	21,900	21,900	21,900
S-3275-5	SOx	42,000	42,000	42,000	42,000
C-1058-5	SOx	24,500	24,500	24,500	24,500
C-1059-5	SOx	70,500	70,500	70,500	70,500

Are any of these erc's pre-baseline? If so, then it is entirely inappropriate for them to be used when the air basin has failed to reach attainment for the 1-hour ozone standard and has failed to demonstrated reasonable further progress in reaching either the 8-hour ozone standard or the pm 2.5 standard. Furthermore, given these conditions in the air basin, it is questionable whether the use of any erc's should be allowed for new, polluting power plants such as HECA.

TRAFFIC AND TRANSPORTATION

Scott Debauche

Under this section it should be noted that there is no analysis of traffic impacts from bringing the coal from Wasco. This is not right. The Labor Camp near the coal depot in Wasco will be negatively affected by more trucks leaving and entering the area because of this project. This must be analyzed. Increased truck traffic turning onto HWY 46 in Wasco must be analyzed.

POWER PLANT EFFICIENCY

Shahab Khoshmashrab

This section does not do a proper analysis of the efficiency of HECA. HECA is extremely inefficient in just about every relevant, measurable area.

Just the opening comments describing a 390 MW gross output plant only producing a 250 MW net output shows how inefficient this project will be from an energy standpoint.

Basically, the inefficiencies become most apparent when HECA is compared to a proposed power plant at Avenal which the CEC recently approved. Avenal is a very efficient, state of the art, natural gas power plant. HECA, in contrast, is inefficient in energy production as noted above and it is inefficient in fuel supply, cost, pollution, water use, land use, and CO2 captured.

The fuel supply must come from outside the area. This is inefficient. Transportation of fuel by train and truck over long distances is inefficient in this time of need for energy efficiency in all matters. In contrast, natural gas is abundant in the area of this project so there is no excuse for building a plant that uses a different type of fossil fuel that needs to be imported into the area.

The cost, in terms of the energy produced, is outrageously high, and therefore an inefficient use of investment money (if indeed, investment money for such an inefficient project can be found at all). Here is a chart comparing Avenal capital cost to HECA.

	Capital Cost	Capital Cost per 100 MW of Capacity	Capital Cost per kilowatt hour produced at 80% capacity over 20 years
HECA 250 MW	\$2.3 billion	\$920 million	\$.066
Avenal 600 MW	\$530 million	\$88.3 million	\$.006

It is easy to see that HECA will cost rate payers a lot more money than Avenal for their electricity if the investors of this project are to get a fair return on their money.

In terms of pollution a comparison with Avenal is also appropriate.

	NOx	VOC	Particulates	SOx
HECA 250 MW	193	36.8	211.1	38.7
Avenal 600 MW	144	35	81	17

HECA per MW of capacity	.77	.15	2.11	.16
Avenal per MW of capacity	.24	.06	.14	.03

The table above speaks for itself. We get far more pollution, which will drift directly towards Arvin, the most polluted city in the nation, from HECA producing electricity than from a plant like Avenal.

Water use is another big issue with HECA but that cannot even be commented on here except to say HECA uses millions of gallons of potentially useful irrigation water while Avenal uses air cooling and minimal water use.

Land use is inefficient when you consider the footprint of HECA, which is on prime farmland, when compared to the small size of Avenal which is located on land of not nearly the quality of the HECA site. This is especially inefficient when it is realized that HECA sits next door to acres and acres of land which has been disturbed by oil field operations for decades and on which no farming is possible but they chose, instead, to locate on prime farmland.

HECA does release less CO2 per MWH than Avenal. But, the amount of reduction and the relative increased cost must be considered in a plant efficiency analysis. Here is a table comparing the two plants with the current California MTCO2E/MWH average and the projected average we will need for 2050.

	MTCO2E/MWH
Current CA average	.43
HECA Dirty fuel with CCS	.25
Avenal Natural gas	.38
Goal for 2050	.02

What can be seen from this table is that HECA reduces CO2 emissions from the state average by about 40% which is not nearly enough to help California reach 2050 goals. This plant would have a minimal positive effect on State 2020 goals under AB 32 and be a problem for 2050 goals. Avenal reduces CO2 from the state average by far more (at least 3 times) than HECA for every dollar of investment money. This is not efficient planning by the CEC to think this is the way to go at this time in getting mandated and projected reductions in CO2 emissions from electrical production. Just because the emissions are less does not mean it is efficient.

This concludes AIR's preliminary comments on Part 1 of the PSA. AIR reserves the right to comment further on Part 1 topics when Part 2 is released and the entire scope of the project is available for public review.

Tom Frantz

President, Association of Irrigated Residents